1988 KODIAK AREA SALMON MANAGEMENT REPORT
To The
ALASKA BOARD OF FISHERIES

by

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MANAGEMENT AREA DESCRIPTION

Boundaries

The Kodiak Management Area comprises the entire Kodiak archipelago and that portion of the Alaska Peninsula which drains into Shelikof Strait between Cape Douglas and Kilokak Rocks at Imuya Bay. The archipelago is approximately 200 miles long, extending from Shuyak Island south to the Trinity Islands. The Alaska Peninsula portion is about 300+ miles long and is separated from the archipelago by the Shelikof Strait which averages 45+ miles in width (Figure 1, page 25).

Management Units

Kodiak salmon management is structured around seven districts subdivided into 52 sections (Figure 2, page 26). These management units are occasionally further subdivided in-season by emergency order to adjust fishing effort on unexpected salmon surpluses or deficits. Each management unit defines a traditional geographical harvest unit managed for specific in-unit stocks and/or traditional fishing patterns associated with these units.

Production Potential

Of the 386 salmon streams in the Kodiak Area, 36 support sockeye populations of varying size, four support viable chinook populations, approximately 174 support coho populations, approximately 150 have productive chum populations, and the entire set of 386 have pink populations. These salmon streams are distributed as follows throughout the area: 74 occur in the Alaska Peninsula portion (Mainland District), and the remaining 312 occur in the archipelago; the number of streams by Island group places 211 on Kodiak Island, 71 on Afognak Island, 18 on Shuyak Island, and 12 on the Trinity Island group (Figure 3, page 27).

The long term average salmon production potential for the Kodiak Management Area is shown in Figure 4 on page 28; this assumes that desired escapement levels are achieved for each species and for each significant production system. It also assumes an average return per spawner which is reasonably comparable to historical averages. As depicted in Figure 4, the long term average harvest potential can be compared to historical harvest levels, either long term or short term, to evaluate existing management programs.

HISTORICAL PERSPECTIVE

Gear

The earliest documented commercial salmon gear were the cannery-owned large, heavily manned beach seine operations that fished near the terminus of Karluk River. This evolved into a period dominated by cannery-owned traps combined with fishermen owned set-gillnet, purse seine, and beach seine operations and then to a post-statehood situation dominated by purse seine, set-gillnet, and beach seine gear in descending order of abundance. With the inception of limited entry in 1974, the post-statehood relationship between gear abundance was permanently established.

The geographical areas currently open to specific gear types have remained unchanged since 1974 except for three situations. In the mid 1970's, in an attempt to accelerate the rebuilding of Karluk stocks, the area between Rocky Point and Cape Uyak in the Karluk District was closed to set gillnetting. No documented gillnetting had occurred in that area since the early 1960's so no existing gillnet sites were affected. More importantly, several prime seining locations which greatly impacted Karluk stocks were made manageable, i.e. a critical area could be kept closed to provide a maximum build-up area for the severely depleted Karluk sockeye and pink stocks. A second gear/area adjustment occurred in the late 1970's in the Alitak District. The common boundary between the Cape Alitak Section, the Moser/Olga Bay section and the Portage-Deadman Section was adjusted to stabilize an unclear boundary description and increasing gear conflicts. The area open to set gillnetting was reduced from Cape Alitak to its current location on Tanner Head and was increased from a point north of Fox Island east to its current location. The final gear/area adjustment was made in Zachar Bay where, in order to alleviate fixed and mobile gear conflicts at the north "marker-set", the closed water sanctuary markers were reduced to their current locations and the new "open-area" was made an exclusive seine area. This was consistent with the exclusive seine areas adjacent to the closed water boundaries in other major westside bays open to both gear types.

Processing

Commercial salmon processing in the Kodiak area has evolved from small salting/pickling operations, to almost exclusively canning, to the current heavy divergence into frozen whole products which supplement canned salmon, the main processed product. In recent years, Kodiak processors have probed into frozen fillets, frozen minced, unfrozen fresh, and salmon surimi. The physical and operational nature of Kodiak processing plants has evolved from scattered seasonally-operated canning operations to today's

highly efficient, multi-tasked, shorebased plants congregated within Kodiak's city limits. The current year round fisheries supporting these plants have provided advanced processing technology that has yielded diverse high quality salmon products in recent years.

Currently there are 16 operational shorebased processing plants in the Kodiak Management Area. Of these, 12 are within Kodiak city limits and 10 of these process salmon. The remaining outlying plants also process salmon. Thus, there is a total of 12 shorebased salmon processing plants within the Kodiak Management Area. Additionally, one Chignik shorebased processing plant regularly processes Kodiak caught salmon, as does one Cook Inlet shorebased processing plant.

Estimated sustained processing capacity of Kodiak shorebased salmon processors for the 1988 season was approximately 1,100,000 salmon per day; this includes both canned and frozen processing. If the two Kodiak shorebased plants which did not process salmon opted to do so, it is estimated that the aforementioned capacity could have been expanded to 1,200,000 salmon per day. Floating processors are not common to the Kodiak Area. Only on large even-year pink salmon returns when fishing time is expected to be abundant and thus a steady supply of fish assured, have floating processors operated in the Kodiak Area. Nevertheless, three floating salmon processor did operate in Kodiak during the 1988 season for a very short period.

Management

The Kodiak Management Area salmon staff is comprised of an Area Management Biologist (F.B. III), an Assistant Area Management Biologist (F.B. II), approximately 15 seasonal employees (F.B. I's and F.T. III's) and a seasonal Boat Officer. The Kodiak salmon research staff includes an Area Research Biologist (F.B. II) and approximately four seasonal employees. A Regional Management Coordinator (F.B., IV) and a Regional Research Biologist (F.B. III) oversee each of the operations.

Basic in-season management activities center around daily evaluations of actual run strength in comparison to pre-season expectations by species. The aforementioned management staff's in-season duties include frequent (several times daily) contact with all buyers to collect updated harvest data by area and species and with as many fishermen as possible to collect their insights into run strength and distribution as well as comments on prevailing in-season management activities. Additional activities include the collection of escapement data from the sixteen various fish-weirs (twice daily) and from numerous aerial observations of fish "build-ups" and actual escapements into management "index systems". Additional in-season information on

returning stock strength is obtained from an ADF&G sockeye test fishery in the Alitak District.

STOCK STATUS

Chinook: The Kodiak Area has two natural occurring chinook salmon populations and two introduced populations. The former are major systems (Karluk and Ayakulik) where annual escapements are monitored by fish weirs; the latter are lesser populations whose escapement is monitored by either fish weir (Fraser) or aerial survey (Pasagshak). There are no directed commercial fisheries on these stocks. Any harvest is incidental to directed fishing time on sockeye and pink salmon. A moderate sportfishery occurs on Karluk and Ayakulik stocks; a large portion of this effort is commercial sportfishing effort. The considerable smaller Fraser population is lightly exploited by recreational and commercial sportfishermen, and the Pasagshak population, smallest of the four, has been protected from all directed sportfishing and incidental commercial fishing to allow a viable spawning population to become established. Current stock status assessment by both ADF&G and U.S.F.W.S. (Kodiak National Wildlife Refuge) for the three large systems is that they are healthy, i.e. escapement requirements are being achieved and that the existing regulatory structure for subsistence, sport and commercial fishing adequately protects these stocks at current levels of exploitation. The success of the Pasagshak "introduction" remains uncertain, however recent trends in escapement are favorable.

Sockeye: Of the 36 known sockeye populations in the Kodiak Area, four are considered to be major (Karluk, Ayakulik, Upper Station, and Fraser in descending order of potential production) and nine are considered to be significant minor populations (Litnik, Uganik, Saltery, Kaflia, Pauls, Swikshak, Little, Thorsheim, and Portage in descending order of potential production). The remaining 23 systems are comparatively minor systems and normally are not exploited by directed commercial effort.

The four major systems generally provide approximately 80 percent of Kodiak's current sockeye production. Directed fisheries on these stocks are intense and require extensive management activities from June 9 through September 15. Two of these systems (Karluk and Upper Station) have distinct manageable early and late runs **(early: June 9 - July 15; late: July 16 - September 15)** while the other two are primarily early runs. All stocks from these four major systems are considered reasonably healthy. Combined maximum production from these stocks has not yet been realized and possibly will not be until the early 1990's. At that time annual harvests from these four

four major systems should equal approximately 1.7 times the current total harvest for the entire area (Table 12, page 59). The rebuilding efforts on these stocks began in 1970 and only recently have the initial benefits of these efforts been evident. These systems should remain relatively stable and productive providing existing "fish-weir" programs and management strategies are not adversely affected.

The nine significant minor systems annually account for approximately five percent of Kodiak's current sockeye production. Some of these systems are monitored via fish weirs (Litnik, Saltery, Pauls, Thorsheim) and the remainder by aerial survey. Information on the former, being more timely and precise, yields the best opportunity for stock management while management of the latter stocks is more precarious. Of these nine systems, five are considered to be moderately healthy and the remaining four marginally healthy based upon 1988 production. A more conservative management approach for all nine systems will prevail in upcoming years. Also, it is expected that several enhancement and rehabilitation projects currently being considered could reverse current negative production trends for some of these stocks. Because these populations can offer a relatively high yield per unit effort by a very efficient, directed commercial seine effort and because they generally don't receive the degree of biological protection afforded larger sockeye populations, these populations remain the most vulnerable to over-exploitation. Current subsistence and sportfishing effort on all of these stocks have not been adversely affected by existing regulations or management strategies. However, the relatively small, fragile populations of some minor commercially insignificant systems which are experiencing rapidly increasing subsistence harvests (Buskin and Barabara systems) may be approaching maximum exploitation. Sportfishing for sockeye on these same systems is currently minimal. These systems will require close monitoring in the future to ensure biological protection and that future subsistence uses will not be jeopardized.

Coho: This species has in recent years received the greatest increase in exploitation of any salmon species in the Kodiak Area. All user groups have a keen interest in this species and the resultant allocation problems have been compounded by Kodiak's coho data base shortcomings. As indicated earlier, approximately 174 systems support coho populations, however approximately 20 percent of these populations generate 80 percent of the area's production. The nature of these major systems (most are lake systems, several of which have fish weirs) almost ensures that minimum escapements will be achieved if knowledgeable in-season management strategies prevail. The greatest concern is for the remaining 80 percent of the streams whose populations are relatively very small and subject to over

exploitation. This occurs when the advantage of local knowledge by either of the three user groups exceeds the ability to monitor and/or manage in-season exploitation. The rather precarious status of these stocks will not improve unless a concentrated regulatory and management effort is implemented to safeguard broodstock. Again, this concern applies to all users of these stocks.

Pinks: Current Kodiak Area pink salmon production is relatively stable at an above average level and should remain so, provided existing management strategies and in-season management activities are retained and extreme environmentally-induced fluctuations don't prevail. The historical data bases on harvest and escapement are fairly extensive and current management personnel are intimately familiar with approximately 20 years of Kodiak pink salmon production and management. Pre-season forecasts are very reliable in projecting extremes for total area production and for major production systems. Forecast precision is reliably adequate to ensure that ADF&G management goals (adequate escapement and orderly fishing opportunities on quality fish) and industry goals (maximum cost efficient production) are commonly attained. Because pink salmon represent the base of Kodiak salmon production (averaging 80 percent of total area harvest) and because of the aforementioned stability associated with management of this species, the long term status of this species is projected to be excellent.

Chums: Increasing emphasis on chum management over the past 10 years has substantially increased not only production, but the data base necessary to insure that current management will be continued and improved upon. Increases in directed fishing on specific chum stocks and the special difficulties associated with evaluating in-season run strength and timing for these stocks has required that intensive chum stock management strategies be developed.

Currently chum escapement requirements and the use of in-season "build-up" and escapement data are being reevaluated. Both historical and in-season harvest data and industry input are also being reevaluated. Because of the similarities between pink and chum salmon freshwater and early-marine portions of their life cycle, because of our understanding and annual evaluation of pink salmon survival (pre-emergent fry program), and because of our ability to take advantage of the multi-age class nature of annual chum returns to develop harvest projections (through catch sampling) the future status of this species is expected to be excellent.

1988 SALMON SEASON SUMMARY

General

The 1988 Kodiak Area commercial salmon fishery can be characterized as a record year in terms of total ex-vessel earnings and average earnings by gear type (Table 6, page 53). Additionally, management activities can also be characterized as being successful in that escapement requirements were adequately achieved for all species (Table 10, page 57). Pre-season harvest projections were attained and/or exceeded for all species as shown below and in Table 2, page 32, and resulted in improved confidence and support of in-season management practices by industry.

Industry Summary of the 1988 Kodiak Commercial Salmon Season

	Numbers of Fish					
1988	Kings	Reds	Coho	Pinks	Chums	Total
Pre-season Harvest Projections	4,000	1,800,000	150,000	15,250,000	1,000,000	18,204,000
Actual Harvest	22,000	2,698,000	303,000	14,262,000	1,426,000	18,711,000
± Weight/Lbs:	13.2	5.7	8.5	3.8	8.9	-
Total Pounds	296,000	15,378,000	2,576,000	54,196,000	12,691,000	85,137,000
± $ Per Pound	$1.25	$2.55	$1.50	$.070	$1.00	-
Estimated Total Ex-Vessel Value	$370,000	39,214,000	3,863,800	37,937,000	12,691,000	94,075,000

The 1988 commercial salmon season lasted 124 days covering the period from June 9 through October 10, the dates of the first and last landings. During that time period, a total of 524 permit holders (323 purse seine, 180 set gillnet, and 22 beach seine) made 19,402 landings, to a total of 16 buyers, which yielded a total harvest of 18,711,000 salmon and a record total ex-vessel value of approximately $94,000,000.

Industry

In 1988, there were 16 buyers, operating 19 processing plants (16 were shorebased and 3 floating processing facilities), which bought fish in the Kodiak Area. Of the shorebased facilities, 10 were located within Kodiak city limits, four within Kodiak Borough, one in Seldovia, and one in the Chignik Management Area at Anchorage Bay. Of the floating facilities, one was associated

with a Kodiak shorebased facility and two were independent transient buyers who operated in Kodiak for a relatively short time enroute from Bristol Bay fisheries to Southeastern fisheries. Of the Kodiak-based processors, two had two processing operations each (Columbia Ward had two shorebased plants and Kodiak Salmon Company had both a shorebased and a floating facility). A listing of active processing facilities in Kodiak's 1988 commercial salmon fishery is shown in Table 7, on page 54.

The 1988 effort levels (active gear) were above average for purse seine and gillnet gear and below average for beach seine gear. A comparison of fishable permits and active permits for the 1988 season is listed in Table 8 on page 55, and a comparison to historical levels is listed in Table 9, page 56.

Historically, the 1988 harvest of 18.7 million salmon (all species) was approximately double the 107 year average of 9.5 million (1882-1988) and approximately 3.6 million fish greater than the recent even-year average (1976-1988) of 15.1 million (Table 1, page 28). A breakdown by species shows that in comparison to the 13 year average (1976-1988), a period of above average production, the 1988 chinook harvest of 22,000 was 5.5 times greater, the sockeye harvest of 2.7 million was 1.8 times greater, the coho harvest 1.8 times greater, the pink harvest 1.1 times greater, and the chum harvest 1.5 times greater.

The timing of the 1988 salmon harvest by species is depicted in Figure 8, on page 34 which also graphically displays the season's daily harvest by species and the significance of Kodiak's pink salmon production. A 1988 harvest summary by species, by management unit, by statistical week is presented in Table 3 on pages 35 through 47. Again the 1988 total Kodiak salmon harvest compares favorably to the entire 107 year history of this fishery shown in Figure 9 on pages 48 and Table 4 on page 51.

The 1988 season was noteworthy in terms of inter-area disharmony generated by the relatively large interception of Cook Inlet bound sockeye in Kodiak Area waters. Proposed regulation change No. 294 to be deliberated before the Board of Fisheries in March 1989 reflects the concern of Cook Inlet fishermen, while ADF&G Regional Data Reports No. 4K88-6 and 4K88-7 review and summarize the interception from both an "in-season perspective" and "post-season analysis".

The 1988 season was also noteworthy in terms of intra-area user group harmony; the traditional aggravation between fixed and mobile gear was at its lowest level in over a decade. The two board approved allocation plans, the Cape Igvak fishery plan and the Alitak District fishery plan, both worked extremely well per the biological and allocative requirements detailed in each plan.

The two other allocative plans in effect, both of which have tentative board approval, also worked extremely well; these two plans are the Westside Kodiak fisheries plan and the Kitoi Bay hatchery management plans.

ADF&G

Implementing these plans and other in-season management actions required the issuance of 24 in-season emergency orders over a 124 day period, which affected fishing time in 52 management units, as shown in Figure 7 on page 33. This figure reflects the level of in-season action required to achieve not only the aforementioned considerations but also the inter- and intra- gear allocation considerations so crucial to a successful management program. In light of both in-season and post-season analysis and of comments by fishermen and processors, as well as ADF&G staff, management of Kodiak's 1988 commercial salmon fishery was deemed very successful. Certainly the initial step in providing the potential for maximum production, as a result of the 1988 escapements, was accomplished for the following future years:

PROGENY YEARS FROM 1988 BROOD YEAR BY SPECIES AND AGE

Age at Return	Pinks	Chums	Coho	Sockeye	Chinook
2	1990	-	-	-	-
3	-	1991	1991	-	-
4	-	1992	1992	1992	1992
5	-	1993	-	1993	1993
6	-	-	-	1994	1994

Basic escapement requirements were achieved for all species and for all major and almost all minor systems. A historical escapement summary by species is shown in Table 10 on page 57; footnote No. 1 of this table explains the nature of this data. In 1988, the overall escapements for all species exceeded historical averages and were consistent with recent annual trends in escapement magnitude. The validity of the 1988 escapement data is best understood by referring to Table 11 on page 58, which summarizes escapement by species for each "fish weir". This data represents actual hand-tallied counts of escapement fish. Per footnote No. 2 of this table, the data represents a major portion of the total chinook, sockeye, and coho salmon escapement (essentially 100%, 95%, and 85%, respectively), a very significant portion of pink escapement (36%), and a minor portion of the chum escapement (5%). The

fish-weir is a major management tool in the Kodiak Area and has annually proved its value to guiding in-season management actions.

A brief escapement summary by species for 1988 is as follows:

- Chinook salmon escapements were excellent occurring at record levels. Table 10 on page 57 reflects this by showing the 1988 escapement being 2.4 times above the recent 12 year average. The total indexed chinook escapement 35,139; Figure 20 on page 58 shows the chinook escapement through the Karluk, Ayakulik and Dog Salmon weirs but it does not include the estimated escapement of 125 chinook into Pasagshak River, an un-weired system.

- Sockeye escapements in general were good to excellent for all major systems and fair to good for the minor systems. A historical escapement summary for the four major systems is shown in Table 12 on page 59. In 1988, desired escapement goals were exceeded in two systems (Fraser and Upper Station), was reached in the Ayakulik system, and was short at Karluk, although the minimum escapement requirement for both early and late Karluk stocks were exceeded. The significance of these four systems and the importance of maintaining a stable level of adequate escapement to them is emphasized by the fact that these systems accounted for approximately 86% of the 1988 sockeye escapement and, if producing at desired levels should be capable of providing an average harvest of approximately 2.5 million red salmon. The minor systems on Kodiak Island and the Mainland Districts received fair to good escapement in 1988; Uganik River may have been the exception where it appears that minimum escapement requirements were not entirely achieved. Afognak District minor sockeye systems received near minimum escapement levels and yielded very little directed harvest.

- Coho escapements were reasonably good into most major systems. The indexed total escapement of 105,000 compared favorably with the 12 year average of 95,000 (Table 10, page 57). Coho minimum escapement goals were enumerated into all systems having fish-weirs except for Karluk where minimum numbers of coho had not been tallied prior to the weir being removed due to high water. However, an aerial evaluation of the Karluk Lagoon coho build-up prior to weir removal indicated enough coho to achieve minimum escapement requirements but only a marginal harvestable surplus. Consequently there was no directed commercial coho fishery in the vicinity of Karluk Lagoon in 1988. It

appears that most minor systems which were surveyed had good escapement levels compared to recent years. For those minor unsurveyed systems occurring adjacent to surveyed systems it is reasonable to assume that escapements were comparable.

- Pink salmon escapements were generally very good to excellent in most systems. The indexed total pink escapement of 4.4 million was .8 times greater than the even year average shown in Table 10 on page 57. It was a well distributed escapement to all management units and it is estimated that approximately 85% went to the index streams (those used for forecasting and in-season management). However, four of the major producing systems received only minimum escapement levels. Two of these, Karluk and Ayakulik, are the two largest pink salmon producers in the management area and are major contributors to even-year pink production in the S.W. Afognak, N.W. Kodiak, and S.W. Kodiak Districts. The other two systems, Deadman and Dog Salmon, are in the top 10 of Kodiak's pink salmon producers, and together can account for at least 50% of the Alitak District's pink production. These escapement shortfalls were attributed, in the case of Karluk and Ayakulik, to an abnormal migration pattern which probably resulted in a greater than expected exploitation on these stocks in non-terminal areas, and in the case of Deadman and Dog Salmon, to a high exploitation rate, on a below average run to these systems, as a result of liberal fishing time in the Alitak District associated with above average sockeye production from the Upper Station system. Again, minimum pink escapement requirements were achieved for all four of these systems.

- Chum salmon escapements were considered good to excellent for almost all major systems. As shown in Table 10 on page 57, the 1988 chum salmon escapement was 1.1 times greater than the recent 12 year average (1976-1988); it was one of the historically better escapements in terms of volume and distribution. Almost all major systems achieved above average escapement.

Fishery Chronology
(June 9 - October 10)

The following chronology of the 1988 season, as shown in Figure 4 page 29, depicts species-specific fisheries and briefly discusses in-season harvest activities and management strategies:

Chinook Salmon Harvest
(June 9 - October 10)

Chinook salmon in the Kodiak Area are not a targeted species either by commercial seine or gillnet gear or by directed ADF&G management activities. The harvest figures presented in the table below represent projected and actual harvests which are incidental to targeted sockeye and pink salmon fisheries. The geographic breakdown of these harvests is based upon historical harvest data and the projected harvests are meant to reflect normal harvest scenarios on above average-sized runs (1989 projection).

	King Salmon Harvest (In Thousands)		
	1988		1989
Location	Projected	Actual	Projected
Afognak			
Hatchery:	.000	.000	.000
Natural:	1.000	2.220	1.500
Westside:	1.400	10.125	5.000
Alitak:	.200	.625	.400
East/Northside Kodiak	.700	1.775	1.000
Mainland:	.700	7.600	2.000
Total	4.000	22.345	9.900

The 1988 Chinook harvest was of record proportions (Table 4, page 49) with almost half of the harvest occurring on Kodiak Island's Westside. The average weight for chinook harvested in 1988 was 13.0 pounds which is consistent with historical average weights. However there was an unusually large number of 7 - 8 pound chinook in this year's harvest, a probable indication of above average production for all the contributor stocks.

The 1988 commercial ex-vessel value of chinook salmon is summarized by gear and is compared to the other salmon species in Table 5, page 52. From this table the following data should be emphasized:

- A conservative ex-vessel value to all permit holders for chinook salmon in 1988 was 0.4 million dollars (based upon an average in-season grounds price of $1.25/lb). This was approximately less than one percent of Kodiak's total salmon ex-vessel value.

- The chinook salmon contribution to each gear type's ex-vessel value is shown below:

	Chinook Harvest By Gear		Chinook Contribution To Gear Totals	
	Number (Thousands)	%	% of Total	% of Ex-Vessel
Purse Seine:	.021	96%	< 1%	< 1%
Beach Seine:	< .001	< 01%	< 1%	< 1%
Set Gillnet:	.001	04%	< 1%	< 1%
Total:	.022	100%		

- Purse seine gear was the major harvester of chinook salmon (96% of total chinook harvested), yet chinook represented less than 1% of both this gear type's total salmon harvest and it's total ex-vessel value.

- Beach seine gear was essentially an insignificant harvester of chinook salmon (< 1%), consequently this species represented less than 1% of both this gear type's total salmon harvest and it's total ex-vessel value.

- Set gillnet gear was a significantly minor harvester of chinook salmon (4%) and this species represented less than 1% of both this gear type's total salmon harvest and it's total ex-vessel value.

Early-Run Sockeye Salmon Fisheries (June 9 - July 15)

The 1988 early-run sockeye harvest exceeded pre-season expectations by 393,000 fish. The Cape Igvak projected harvest did not develop because of the weak early-run Chignik stock. The Cape Igvak management plan's allocative and biological requirements were strictly adhered to. The Karluk harvest did not develop as expected, being approximately 75,000 fish short, whereas the actual harvests on Ayakulik and Fraser stocks exceeded pre-season expectations by 326,000 sockeye combined. The Upper Station and minor systems harvests were similar to pre-season expectations. The unexpected contribution of migrant Cook Inlet stocks to the Kodiak Area's harvest during this time period was at a record level. For comparative purposes, historical harvest summaries for the Cape Igvak, Alitak, Westside Kodiak, and Shelikof fisheries (combined data for both early-and late-run sockeye fisheries) are shown in Tables 13 through 18, pages 60 through 66 and Figures 10 through 13, pages 67 through 70. A summary of the 1988 projected vs. actual harvests as well as the projected 1989 harvest for each stock is shown below:

Fishery	Early-Run Red Salmon Harvest (In Millions) 1988 Projected	1988 Actual	1989 Projected
Cape Igvak	.280	.000	.141
Karluk	.225	.150	.250
Ayakulik	.105	.260	.367
Upper Station	.090	.092	.091
Fraser	.125	.296	.132
Minor Systems	.035	.026	.070
Other	.000	.429	.070
Total	.860	1.253	1.121

Late Run Sockeye Salmon Fisheries (July 16 - September 15)

The 1988 late-run sockeye harvest exceeded pre-season expectations by 506,000 fish. While the Cape Igvak, Karluk and minor systems production fell short of pre-season projections, the Ayakulik and Upper Station production exceeded expectations by 450,000 fish combined. Also, the unexpected contribution of migrant Cook Inlet stocks provided a significant addition to this harvest. A summary of the 1988 projected vs. actual harvests as well as the projected 1989 harvest for each stock is shown below:

Fishery	Late-Run Red Salmon Harvest (In Millions) 1988 Projected	1988 Actual	1989 Projected
Cape Igvak	.150	.034	.133
Karluk	.325	.236	.300
Ayakulik	.050	.150	.151
Upper Station	.400	.750	.779
Fraser	-	-	-
Minor Systems	.015	.005	.020
Other	.000	.271	.030
Total	.940	1.446	1.413

The 1988 commercial ex-vessel value of sockeye salmon is summarized by gear and is compared to the other salmon species in Table 5, page 52. From this table the following data should be emphasized:

- A conservative ex-vessel value to all permit holders for sockeye salmon in 1988 was 39.2 million dollars (based upon an average in-season grounds price of $2.55/lb.) This was approximately 42% of Kodiak's total salmon ex-vessel value.

- The sockeye salmon contribution to each gear type's ex-vessel value is shown below:

	Sockeye Harvest By Gear		Sockeye Contribution To Gear Totals	
	Number (Millions)	%	% of Total	% of Ex-Vessel
Purse Seine:	1.839	68%	12%	38%
Beach Seine:	.002	< 01%	< 01%	04%
Set Gillnet	.857	32%	27%	60%
Total:	2.698	100%		

- Purse seine gear was the major harvester of sockeye salmon (68% of total sockeye harvested), yet sockeye only provided 12% of this gear type's total salmon harvest, but did provide 38% of it's total ex-vessel value.

- Beach seine gear was an insignificant harvester of sockeye salmon (< 01%) and this species represented a very minor contribution (1%) of this gear type's total salmon harvest and only (4%) of it's total ex-vessel value.

- Set gillnet gear was a very significant harvester of sockeye salmon (32%), and this species provided a significant portion (27%) of this gear type's total salmon harvest and a significantly major (60%) of it's ex-vessel value in 1988.

Coho Salmon Fisheries (August 1 - October 10)

As shown below the 1988 coho harvest exceeded pre-season expectations by 153,000 fish. This harvest was 1.8 times greater than the recent 13 year average and was 3.8 times greater than the 107 year average as shown in Table 1, page 28. It's apparent that increased escapements (Table 10, page 57) along with favorable environmental conditions have combined to maximize production from the estimated 174 coho streams in this area.

Directed management for this species usually begins during the first week of August and builds in intensity through season's end. Figure 8 on page 34 depicts the timing of the 1988 coho harvest and shows that the majority of the harvest occurred between August 1 and October 10. Because a significant proportion of the coho harvest occurred as incidental harvest during the pink, chum and late-sockeye management period, the

liberal amount of fishing time associated with this period reduced the numbers of coho reaching terminal areas in 1988. Consequently, terminal coho fisheries in 1988 were not as plentiful as in past years with less fishing time. Again, this 1988 scenario was anticipated because of the projected large pink returns, and subsequent management action ensured that adequate coho escapement was achieved. A summary of the projected vs. actual 1988 harvests as well as the projected 1989 harvest by geographical area is shown below:

	Coho Salmon Harvest (In Millions)		
	1988		1989
Location	Projected	Actual	Projected
Afognak			
Hatchery:	.000	.000	.000
Natural:	.040	.079	.050
Westside:	.055	.091	.065
Alitak:	.020	.030	.030
East/Northside Kodiak	.015	.048	.025
Mainland:	.020	.055	.030
Total	.150	.303	.200

The 1988 commercial ex-vessel value of coho salmon is summarized by gear and is compared to the other salmon species in Table 5, page 52. From this table the following data should be emphasized:

- A conservative ex-value to all permit holders for coho salmon in 1988 was 3.9 million dollars (based upon an average in-season grounds price of $1.50/lb.). This was approximately four percent of Kodiak's total salmon ex-vessel value.

- The coho salmon contribution to each gear type's ex-vessel value is shown below:

	Coho Harvest By Gear		Coho Contribution To Gear Totals	
	Number (Millions)	%	% of Total	% of Ex-Vessel
Purse Seine:	.267	88%	02%	05%
Beach Seine:	< .001	< 01%	< 01%	01%
Set Gillnet:	.001	04%	< 01%	03%
Total:	.303	100%	-	-

- Purse seine gear was the major harvester of coho (88% of total coho harvested) yet coho only provided 2% of this gear type's total salmon harvest and only 5% of it's total ex-vessel value in 1988.

- Beach seine gear was an insignificant harvester of coho (< 1%), and this species represented a very minor contribution (< 1%) of this gear type's total salmon harvest and only 1% of it's total ex-vessel value.

- Set gillnet gear was a significant harvester of coho (12%), yet coho only represented 1% of this gear type's total salmon harvest and only 3% of it's total ex-vessel value in 1988.

PINK SALMON FISHERY
(July 6 - September 5)

The 1988 pink salmon actual return, although similar to the projected return, yielded considerable consternation in-season due to late run-timing, abnormal migration patterns, and unexpected differential production between major pink systems. Nevertheless, the forecasted total return was extremely accurate and resulted in all pre-season harvest and most desired escapement objectives being achieved.

A brief season overview highlights the following events:

- As shown in the table below, the total 1988 harvest was approximately one (1) million fish less than expected. The supplemental production from Kitoi hatchery was considerably less than expected, however, the abnormal migration patterns experienced in 1988 make it conceivable that a significant proportion of the 1988 hatchery production was harvested in statistical areas other than those normally designated for hatchery production (example: Tonki area, Outer Chiniak, etc.). A historical harvest summary of the geographical area associated with Kitoi production is shown in Table 19 page 71.

- A summary of the 1988 projected vs. actual harvest as well as the projected 1989 harvest by geographic area is shown below:

Location	Pink Salmon Harvest (In Millions) 1988 Projected	1988 Actual	1989 Projected
Afognak			
Hatchery:	1.250	.307	2.100
Natural:	.645	2.426	.350
Westside:	9.206	6.521	3.100
Alitak:	.753	.386	2.100
East/Northside Kodiak	3.080	2.874	1.850
Mainland:	.316	1.748	1.000
Total	15.250	14.262	10.500

- The run timing was such that the peak harvest dates were on August 9 and 10, five to six days later than the average pink harvest date (1970-1988 all years) of August 4. Because of this late timing on a projected near-record pink return and because of weaker than expected pink returns in other areas of the state, considerable concern occurred through July as Kodiak's pink return was slow to develop. It wasn't until August 13 before the projected minimum harvest level of 12.2 million was achieved and it was apparent that the projected point harvest estimate would be approached.

- A summary of fishing time by period is shown below and applies to all traditional pink harvest areas except those areas having a blend of pink/chum/sockeye salmon management in which case fishing time was generally less (this fishing time is also graphically depicted in Figure 7, on page 33). The table shown below emphasizes the late timing of the 1988 pink run compared to average timing. Normally by July 30, 40% of the annual pink harvest has occurred; in 1988 only 26% of the harvest had occurred by that date.

Fishing Period Sequence	Week Ending	Action Dates/Times	Hours	1988 Harvest No's.	%	Avg.[3] %
First[1]	7/9	12 Noon 7/6 - 9 P.M. 7/8	57	108,861	< 1%	4%
Second	7/16	12 Noon 7/11 - 9 P.M. 7/15	105	364,268	3%	5%
Third	7/23	12 Noon 7/18 - 9 P.M. 7/22	105	883,915	6%	10%
Fourth	7/30	12 Noon 7/24 - 9 P.M. 8/5	297	2,402,050	17%	21%
Fifth	8/6			3,252,636	23%	28%
Sixth	8/13	12 Noon 8/8 - 9 P.M. 8/20	294	4,119,405	29%	21%
Seventh	8/20			2,635,034	19%	9%
Eighth	8/27	12 Noon 8/23 - 6 P.M. 8/25	54	404,759	3%	3%
Ninth[2]	9/3	23 Noon 8/30 - 6 P.M. 9/1	54	88,622	< 1%	4%
TOTAL:		Approximately 38 days	966	14,262,038	100%	100%

1/Includes pink harvest prior to week ending 7/9/88 (21,710) plus pink harvest during week ending 7/9/88 (89,639)

2/Includes pink harvest after week ending 9/3/88 (13,765) plus pink harvest during week ending 9/3/88 (74,857).

3/The percentage in this column represents the average percent harvest by statistical week for the 19 year period (1970-1988).

- As indicated in the pre-season **1988 HARVEST STRATEGY**, the projected large pink run was expected to provide liberal fishing opportunities to facilitate harvest requirements. An excerpt from this harvest strategy is shown in Figure 5 on page 30. A comparison of this excerpt to the table shown above reflects the extent to which the actual pink fishery deviated from pre-season expectations.

- It is important to remember that the Kodiak pink salmon in-season harvest strategy adheres to the following criteria for fishing time: Directed pink salmon management begins annually on July 6 and is primarily completed by late August; it is totally completed by early September. The first two fishing periods (as shown above) are based solely upon projected total return strength; the third fishing period is based upon a blend of projected return and some early evaluation of actual return, e.g. harvest data, bay build-ups; the fourth and fifth fishing periods almost solely on actual return strength; and the sixth, seventh, eighth, and ninth periods solely upon actual return with major consideration given to differential production, e.g. weak appearing areas have less fishing time than stronger-appearing areas.

- As previously mentioned, a significant unexpected event which occurred in this year's fishery, was the rarely seen change in inshore migration patterns. Examples of this occurred on the westside of Kodiak and Afognak where fish were northbound at the capes and southbound just offshore suggesting a counter clockwise milling pattern as they progressed southward in their normal migration pattern. This may have affected the final harvest distribution of those pinks which were expected to be harvested in the S.W. Kodiak District, a major even-year pink production area. While other harvest anomalies appear to have occurred, it is difficult to speculate as to which fish were caught where when the total return is of near record proportions. Certainly the escapement levels and distribution met pre-season expectations. Escapement which was geographically disproportionate to the harvest distribution did not

occur; heavy harvest areas received escapements commensurate with those harvests and vice-versa for the weaker production areas.

- The 1988 commercial ex-vessel value of pink salmon is summarized by gear and is compared to other salmon species in Table 5 on page 52. From this table the following information should be emphasized:

  - A conservative ex-vessel value to all permit holders for pink salmon in 1988 was 37.9 million dollars (based on an average in-season grounds price of $0.70/lb.). This was approximately 40 percent of Kodiak's total salmon ex-vessel value.

  - The pink salmon contribution to each gear type's ex-vessel value is show below:

	Pink Harvest By Gear		Pink Contribution to Gear Totals	
	Numbers (Millions)	%	% of Total	% of Ex-Vessel
Purse Seine:	11.949	.82%	.78%	.43%
Beach Seine:	.234	.02%	.91%	.73%
Set Gillnet:	2.079	.15%	.28%	.28%
TOTAL	14.262	100%	-	-

- Purse seine gear was the major harvester of pinks (82% of total pinks harvested); pinks comprised a major proportion (78%) of this gear type's total salmon harvest and a significant (43%) of it's total ex-vessel value.

- Beach seine gear was a relatively minor harvester of pinks (2%); however this species comprised a major proportion (91%) of this gear type's total salmon harvest and a very significant (73%) of it's total ex-vessel value.

- Set gillnet gear was a significant harvester of pinks (15%); this species was an important contributor (28%) to this gear type's total salmon harvest and it's total ex-vessel value (28%).

Chum Salmon Fishery
(July 6 - September 5)

As shown below, the 1988 chum salmon actual harvest exceeded pre-season expectations by 426,000 fish. Both the Westside and Eastside districts' returns were excellent with harvests being respectively 2.4 and 1.5 times greater than expected respectively. Harvests in the Afognak, Alitak, and Mainland Districts were close to expectations. Chum quality appeared to be excellent, especially in the north and mid Mainland sections. Many of these chums would have been exposed to more fishing effort had not an abnormal shift in fishing effort to "hotter" fishing areas occurred in July. As mentioned earlier, the subsequent chum escapements to most early and even many late run major chum systems was very good to excellent. The 1989 chum harvest projections by geographical fisheries are also listed below:

	Chum Salmon Harvest (In Millions)		
	1988		1989
Location	Projected	Actual	Projected
Afognak			
Hatchery:	.000	.001	.000
Natural:	.050	.087	.050
Westside:	.200	.484	.350
Alitak:	.100	.093	.080
East/Northside Kodiak	.250	.369	.260
Mainland:	.400	.392	.275
Total	1.000	1.426	1.015

The 1988 commercial ex-vessel value of chum salmon is summarized by gear and is compared to other salmon species in Table 5, page 52. From this table the following data should be emphasized:

- A conservative ex-vessel value to all permit holders for chum salmon in 1988 was 12.7 million dollars (based on an average in-season grounds price of $1.00/lb.). This was approximately 14% of Kodiak's total salmon ex-vessel value.

- The chum salmon contribution to each gear type's ex-vessel value is shown below:

	Chum Harvest By Gear		Chum Contribution To Gear Totals	
	Number (Millions)	%	% of Total	% of Ex-Vessel
Purse Seine:	1.220	85%	09%	15%
Beach Seine:	.022	02%	09%	23%
Set Gillnet:	.184	13%	06%	08%
Total:	1.426	100%	-	-

- Purse seine gear was the major harvester of chums (85% of total chums harvested), yet chums only provided (9%) of this gear type's total salmon harvest and 15% of it's total ex-vessel value in 1988.

- Beach seine gear was a very minor harvester of chums (only 2%), but even though chums only represented 9% of this gear type's total salmon harvest, it did represent 23% of it's total ex-vessel value.

- Set gillnet gear was a significant harvester of chums (13%), yet chums only represented (6%) of this gear type's total salmon harvest and only (8%) of it's total ex-vessel value.

1989 ISSUES AND PLANS

The paramount issues for the 1989 Kodiak salmon fishery can be categorized by user group:

Non-Local User Groups:

Concern has been expressed by both Cook Inlet industry and ADF&G over the Shelikof Straits interception of Cook Inlet bound fish by Kodiak Area fisheries. This is discussed in proposed regulation change No. 294, which will be addressed at the March 1989 Board of Fisheries meeting. Written summaries of the nature of that interception have been presented to the Board by Kodiak Area staff (Regional Data Reports No. 4K88-6 and No. 4K88-7); oral presentations will also be given at that meeting. The results of Board action on proposal 294 could have an effect on the 1989 salmon harvest strategy for the Kodiak Management Area. Depending upon the nature of the Board action and depending upon the level of sockeye interception in 1989, the major ramifications of this issue could be more thoroughly discussed during the fall 1989 Board meetings when the Kodiak Area's regulations will be up for review.

Local User Groups:

The Shelikof Straits sockeye interception issue will be closely followed by all commercial gear types because of the concern for regulatory changes in fishing patterns which may impact normal harvest opportunities for both gear types. In 1989, the fishing time during the "Intercept Period" in the "Intercept Area" (Figures 10 and 11 on pages 67 and 68) is expected to be similar to that experienced in 1987, where pinks are the targeted management species (Afognak) and similar to that experienced since 1987 where chums are the targeted management species (Mainland). Close monitoring of non-local sockeye interception will occur and in-season information on the comparative nature of any 1989 interception will be available in-season to all concerned. A complete post-season summary will be available for the 1989 Board of Fisheries meeting.

The concerns expressed in the March 1988 Management Report to the Board dealt primarily with intra-area allocation problems. Specifically, 1) Equitable management of early and late-run sockeye fisheries in the Alitak Bay District, 2) Escalation of gear conflicts between fixed and mobile gear in the N.W. Kodiak District, and 3) the degree to which differences in pre-season and post-season management strategies occur in the N.W. and S.W. Districts. Essentially all three of these concerns were

alleviated in 1988 through a combination of Board action in March of 1988 and a more aggressive in-season management approach during the 1988 season which closely followed a detailed **pre-season harvest strategy**, excerpts of which are shown in Figures 5 and 6 on pages 30 and 31. Neither of the three aforementioned issues are expected to be major issues in 1989.

An annually recurring concern over the lack of adequate deterrent to illegal fishing seems to be heating up. The concern applies mostly to the procedure whereby apprehended violators are not levied punishment commensurate with the economic consequences of their illegal actions, be it loss of escapement fish or the loss of a legal opportunity for all participants to compete for surplus fish. A more expeditious and aggressive procedure for dealing with violators by the court systems has been the common complaint.

The 1989 projected salmon harvest by species and by broad geographical area is listed in Table 20 on page 72. These projections are for above average harvests for all species and are presented with a reasonable degree of confidence. The accuracy of Kodiak's annual harvest projections are considered reasonably reliable in terms of relative usefulness; although improved precision of these projections is an ongoing concern. That notwithstanding, both industry and ADF&G are optimistic about 1989 being a good salmon year for the Kodiak Management Area.

Figure 1.

KODIAK MANAGEMENT AREA
Comparisons to Adjacent Management Areas
Locations, Boundaries, Management Units

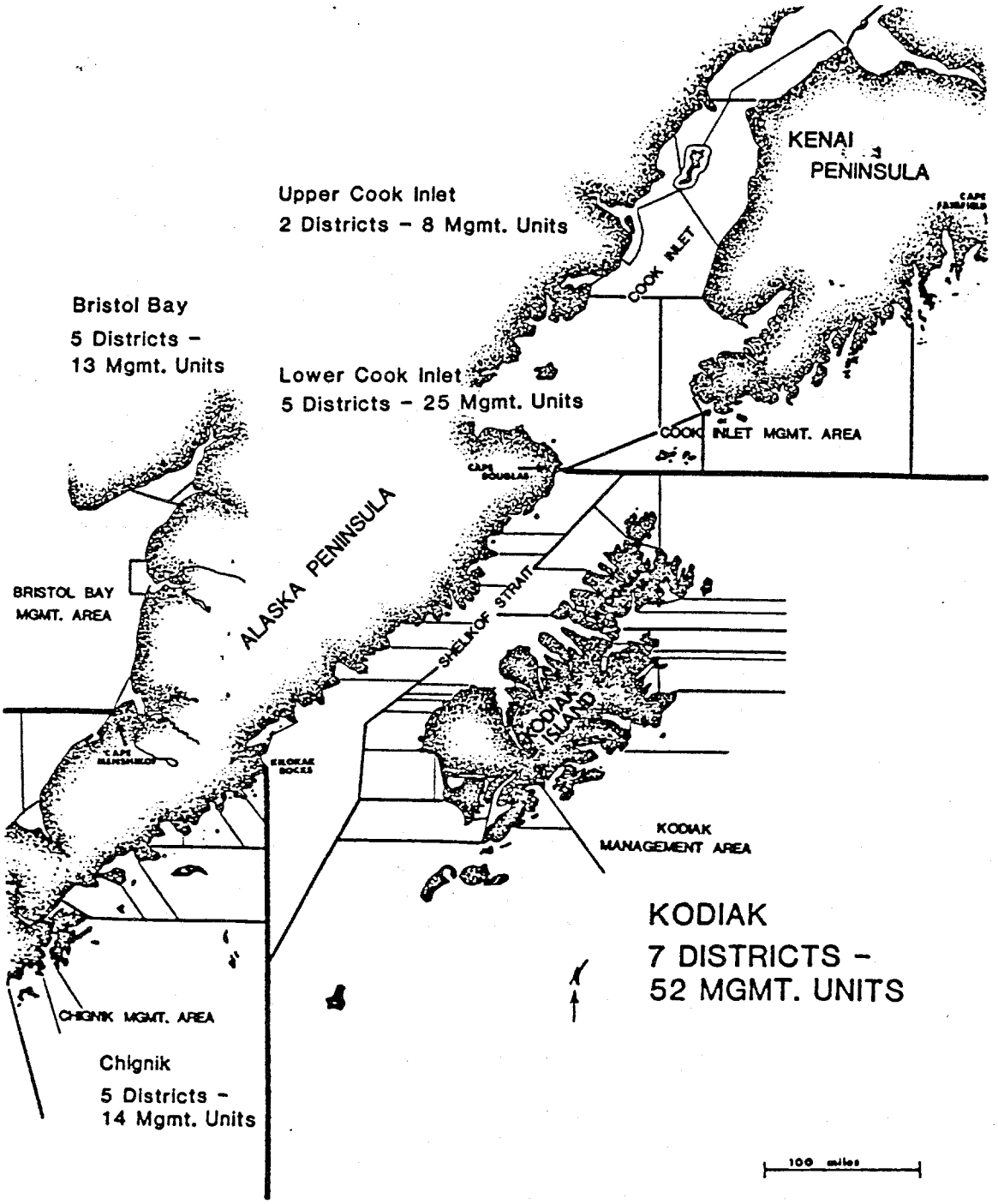
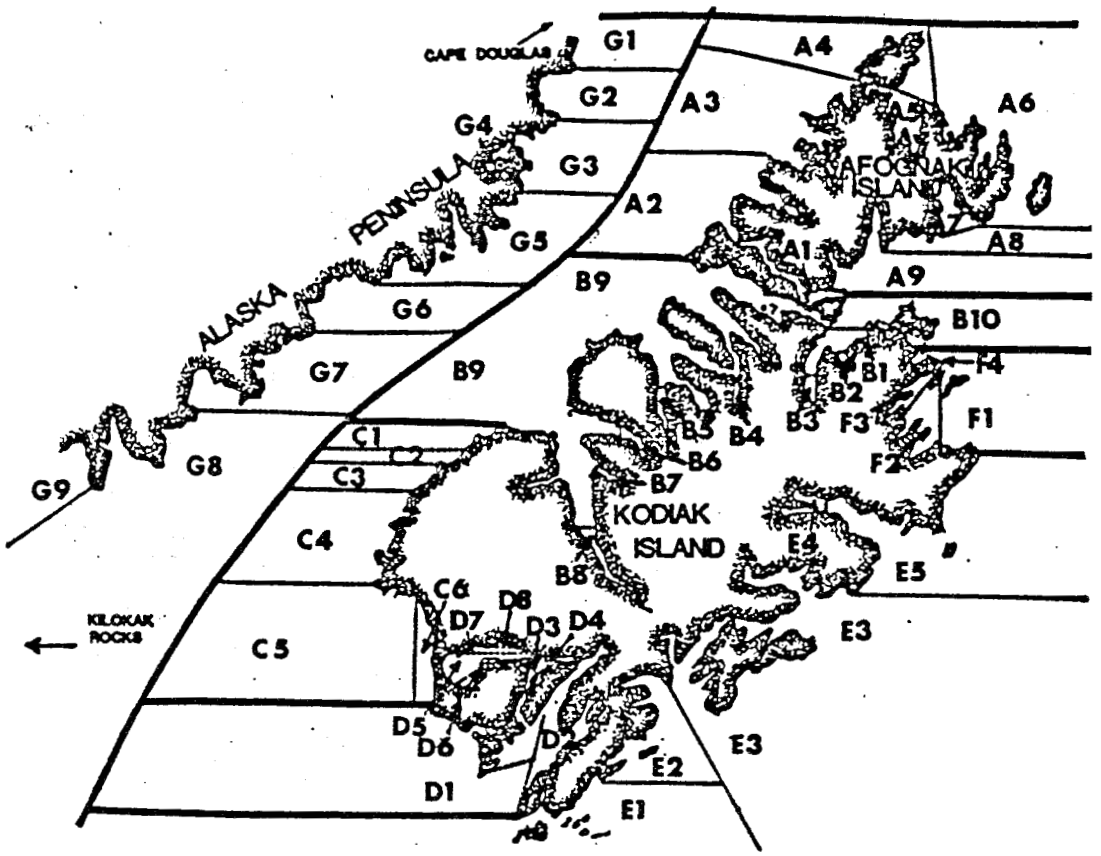


Figure 2.

KODIAK MANAGEMENT AREA
Regulatory Districts and Sections
(Management Units)



KODIAK MANAGEMENT AREA DISTRICTS/SECTIONS

A. AFOGNAK DISTRICT

A1 RASPBERRY STRAITS S.
A2 SOUTHWEST AFOG. S.
A3 NORTHWEST AFOG. S.
A4 SHUYAK IS. S.
A5 PERENOSA BAY S.
A6 NORTHEAST AFOG. S.
A7 IZHUT BAY S.
A8 KITOI BAY S.
A9 DUCK BAY S.

B. NORTHWEST KODIAK D.

B1 ANTON LARSON BAY S.
B2 SHERATIN BAY S.
B3 KIZHUYAK BAY S.
B4 TERROR BAY S.
B5 N. UGANIK BAY S.
B6 SPIRIDON BAY S.
B7 ZACHAR BAY S.
B8 UYAK BAY S.
B9 CENTRAL S.
B10 NORTH CAPE S.

C. SOUTHWEST KODIAK D.

C1 OUT. KARLUK S.
C2 N. KARLUK S.
C3 STURGEON S.
C4 HALIBUT BAY S.
C5 OUT. AYAKULIK S.
C6 N. AYAKULIK S.

D. ALITAK BAY D.

D1 C. ALITAK S.
D2 HUMPY-DEAD. S.
D3 MOSER-OLGA S.
D4 DOG SAL. FLATS S.
D5 OUT. UP. STAT. S.
D6 N. UP. STAT. S.
D7 OUT. AKALURA S.
D8 IN. AKALURA S.

E. EASTSIDE KODIAK D.

E1 7-RIVERS S.
E2 2-HEADED S.
E3 SITKALIDAK S.
E4 IN. UGAK BAY S.
E5 OUT. UGAK S.

F. NORTHEAST KODIAK D.

F1 OUT. CHINIAK S. S.
F2 IN. CHINIAK S. S.
F3 BUSKIN RIVER S.
F4 MONASHKA MILL S. S.

G. MAINLAND DISTRICT

G1 BIG RIVER S.
G2 HALLO BAY S.
G3 OUT. KUKAK S.
G4 IN. KUKAK S.
G5 DAKAVAK S.
G6 KATMAI S.
G7 ALINCHAK S.
G8 CAPE IGVAK S.
G9 WIDE BAY S.

Figure 3.

KODIAK MANAGEMENT AREA
Salmon Production Systems

Estimated Number of Salmon Streams per District,[1/] with Species Distribution.[2/]

Management District	Number of Streams	Number of Streams With Each Species				
		King	Red	Coho	Pink	Chum
Afognak	89	0	15	48	89	5
NW Kodiak	58	0	3	22	58	23
SW Kodiak	11	2	2	10	11	6
Alitak	27	1	5	15	27	14
East. Kodiak	101	1	4	32	101	47
NE Kodiak	26	0	1	20	26	9
Mainland	74	0	6	27	74	46
TOTAL	386	4	36	174	386	150

1/ The total number of streams identified in this table are depicted on the 1989 Kodiak Area Salmon District Map.
2/ These estimates are based on current knowledge and, in fact, are expected to change as more system specific data is collected.

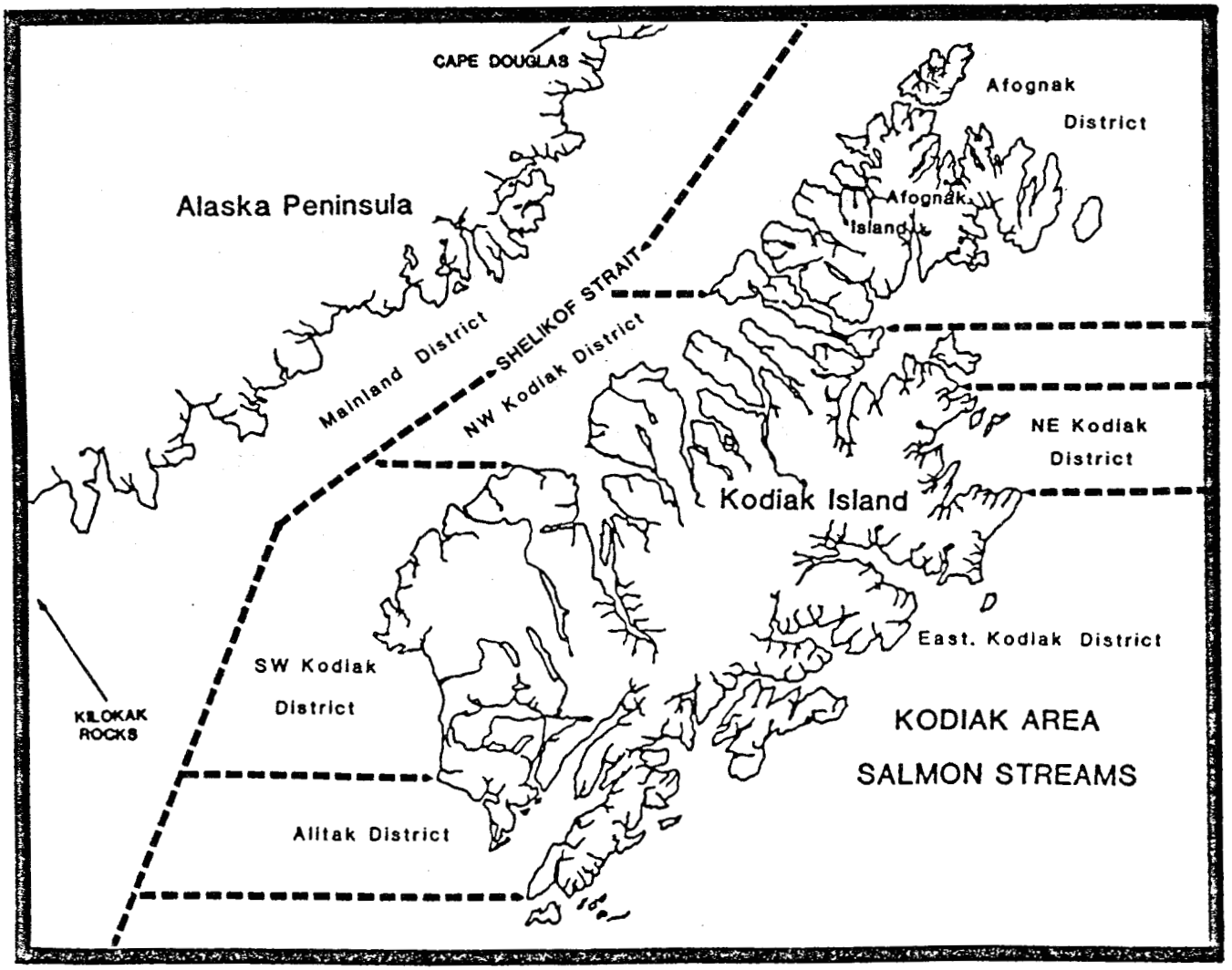


Table 1.

KODIAK MANAGEMENT AREA
Salmon Production[1/] - Potential vs. Actual
(MILLIONS OF FISH)

SPECIES	PRODUCTION POTENTIAL LONG TERM AVERAGE			HARVEST POTENTIAL	HARVEST ACTUAL	
	Desired Indexed Escapement	Return Per Spawner	Total Return	Long Term Average	107 Year Period (1882-1988)	13 Year Period (1976-1988)
KING	.015	2.0	.030	.015	.002	.004
RED	1.800	2.5	4.500	2.700	1.000	1.445
COHO	.150	2.0	.300	.150	.080	.168
PINK O.[2/]	2.000	4.0	8.000	6.000	7.700	7.481
PINK E.[3/]	3.900	4.0	15.600	11.700		12.585
CHUM	.700	3.0	2.100	1.400	.700	.929
TOTAL O.[2/]	**4.665**	-	**14.930**	**10.265**	9.500	**10.027**
TOTAL E.[3/]	**6.565**	-	**22.530**	**15.965**		**15.131**

1/ Natural Production
2/ O. = Odd Numbered Years
3/ E. = Even Numbered Years

2/15/89
L.M./D.P.

Figure 4.

KODIAK COMMERCIAL SALMON FISHERIES MANAGEMENT CHRONOLOGY

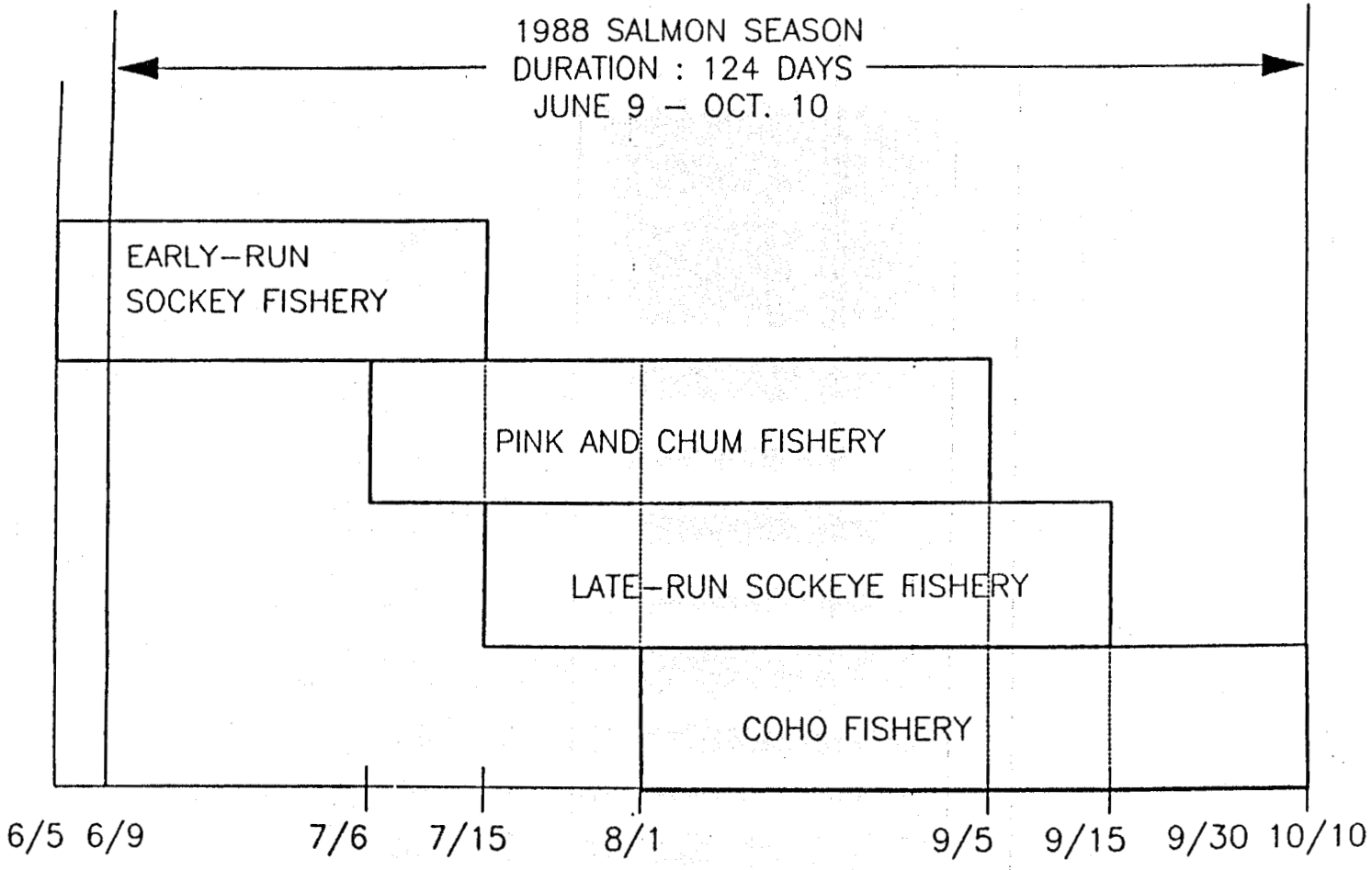


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Figure 5.

KODIAK MANAGEMENT AREA
- Excerpt from the pre-season 1988 Harvest Strategy for the Commercial Salmon Fishery

- PINKS: Because the projected pink salmon return is expected to be above average in magnitude, fishing periods are expected to average five days in length. However, the length of individual fishing periods is expected to vary from 2-1/2 days to 7 days per week during the period July 6 through August 20. Scenarios on possible fishing time during this time period for those management units unaffected by other specific considerations is listed below:

  - The initial period which begins at 12:00 noon on July 6 will be 2-1/2 days long, ending at 9:00 P.M. on July 8.

  - The second and third periods will expand to approximately 4-1/2 days and will run from 12:00 Noon July 11 through 9:00 P.M. July 15 and from 12:00 Noon July 18 through 9:00 P.M. July 22. An extension in fishing time to the third period will occur if it appears that the actual pink return may exceed the forecasted returns.

  - The fourth period will be approximately 4-1/2 days long and will run from 12:00 Noon July 25 through 9:00 P.M. July 29. However, the peak of the pink salmon harvest should be evident by this period and if pre-season expectations appear to be valid an extension in fishing time to continuous fishing is highly likely.

  - The fifth fishing period, or that time period from approximately 12:00 Noon August 1 through 9:00 P.M. August 5, should be the peak harvest period for Kodiak's pink return providing normal timing occurs. Again, if pre-season expectations appear valid this period will be a continuation of the previous period.

  - The sixth fishing period, or that time period from approximately 12:00 Noon August 8 through 9:00 P.M. August 12 should be a post-peak period. Consequently, for identified weakness in return strength which may require system-specific adjustments in fishing time by management unit and/or closed water sanctuaries, deviations in the pattern of fishing from previous periods will be more evident.

  - The seventh fishing period will be approximately 3-1/2 days long and will run from 12:00 Noon August 15 through 6:00 P.M. August 18 (closing times of all fishing periods after August 16 will be 6:00 P.M. rather than 9:00 P.M. as recommended by the Kodiak Fish and Game Advisory Committee.) This will be an important period requiring a more multi-species management approach in those sections where pinks had been the target species for the previous six periods. Emphasis will be on harvesting excess good quality pink salmon or on achieving minimum pink salmon escapements where applicable, with concern towards the run strength of late-run sockeye salmon and late-run chum salmon.

  - The eighth fishing period will be approximately 3-1/2 days and will run from 12:00 Noon August 22 through 6:00 P.M. August 25. This will essentially be primarily a clean-up period (for both escapement and harvest) for most pink salmon stocks, however some late-run stocks will require continued concern for achieving quality harvest or proper escapement levels. This concern will continue into the first week of September for the few extremely late-run pink salmon systems. Again this period will require a major emphasis on multi-species management; it is a critical management period for late-run sockeye and chum salmon as well as some early-run coho stocks.

Figure 6.

KODIAK MANAGEMENT AREA
Excerpt from the Pre-Season 1988 Harvest Strategy

LENGTH OF FISHING PERIODS

- SOCKEYE: In general, each fishing period targeting on sockeye for both early and late runs to all main system stocks will be dependent upon "weir" escapements. This will also apply to those minor "weired" systems targeted by the commercial fishery.

  The exceptions to this will be the normal June commercial test fishery in the Alitak District and the new June commercial test fishery in the N.W. Kodiak District (see Table 3 for statistical map showing approximate boundaries of this district). As shown in Table 1, both of these initial commercial test fisheries will be 33 hours long extending from 12:00 noon Thursday June 9 through 9:00 P.M. Friday June 10. Additionally, a second 33 hour commercial test fishery will occur in the N.W. Kodiak District on approximately June 14 or 15 depending upon when this fishery can be coordinated with other terminal sockeye fisheries in order to spread the effort. This second commercial test fishing period will only occur on those years when harvestable surpluses of sockeye are projected for Kodiak's four (4) major sockeye systems; 1988 is such a year. Additional fishing time in the Alitak District will depend on the results of the June 9 test fishery, weir escapements and positive build-up trends.

  In conjunction with this second commercial test fishing period will be the initial 33 hour fishing period for targeted healthy minor sockeye systems (Uganik, Saltery, etc.). Specific management units (sections) open for this fishery will be dependent upon the health of the pertinent systems associated with these units. The E.O. announcement for this opening will specify which sections are to be opened.

  In the case of the Igvak sockeye fishery, fishing periods in the Cape Igvak section will continue to be in increments of 24 hours running from 12:00 midnight to 12:00 midnight. Fishing time will be dependent upon an evaluation of the Chignik System sockeye run, the predominant contributing system for sockeye harvested in this section. Please review the Cape Igvak management plan listed in the regulations on page 26 of this document to better understand the biological and allocative requirements of this plan. for the 1988 season, as in recent past seasons, fishing time will initially be allocated in the Cape Igvak section based upon the criteria listed in paragraph (c) of the plan.

- CHUMS AND COHO: A large portion of the 1988 Kodiak chum and coho salmon harvest will occur in non-terminal locations associated with major pink salmon fisheries during those periods occurring from July 6 through approximately mid-August. System-specific chum and coho salmon fishing periods which occur during that time period will commonly have less fishing time than corresponding pink salmon fishing periods; management of specific chum and coho salmon stocks will emphasize the use of the new section boundaries (e.g. for chum: Zachar Bay section, Inner Kukak section,. Kizhuyak section, etc!; and for coho: Shuyak Island section, Inner Ugak Bay section, etc!)

Table 2.

KODIAK MANAGEMENT AREA
1988 COMMERCIAL SALMON FISHERY
PROJECTED VS. ACTUAL HARVEST BY SPECIES BY FISHERY 1/

FISHERY	PROJECTED HARVEST/ACTUAL HARVEST (In millions of Fish)	
Early Run Sockeye Salmon Fisheries (6/9-7/15)		
Cape Igvak	.280	.000
Karluk	.225	.150
Ayakulik	.105	.260
Upper Station	.090	.092
Fraser	.125	.296
Minor Systems	.035	.026
Other	.000	.429
Sub-Total	.860	1.253
Pink Salmon Fisheries (7/6-9/5)		
Afognak (Hatchery)	1.250	.307
Afognak (Natural)	.645	2.426
Westside Kodiak	9.206	6.521
Alitak	.753	.386
Eastside/Northend Kodiak	3.080	2.874
Mainland	.316	1.748
Sub-Total	15.250	14.262
Chum Salmon Fisheries (7/6-9/5)		
Afognak (Hatchery)	.000	.001
Afognak (Natural)	.050	.080
Westside Kodiak	.200	.484
Alitak	.100	.093
Eastside/Northend Kodiak	.250	.369
Mainland	.400	.392
Sub-Total	1.000	1.426
Late Run Sockeye Salmon Fisheries (6/16-9/15)		
Cape Igvak	.150	.034
Karluk	.325	.236
Ayakulik	.050	.150
Upper Station	.400	.750
Fraser	-	-
Minor Systems	.015	.005
Other	.000	.271
Sub-Total	.940	1.446
Coho Salmon Fisheries (6/9-10/15)		
Afognak	.040	.079
Westside	.055	.091
Alitak	.020	.030
Eastside/Northend Kodiak	.015	.048
Mainland	.020	.055
Sub-Total	.150	.303
GRAND TOTAL (6/9-10/15)	18.204	18.986

1/ For both early and late run sockeye, the fishery labeled "other" refers to the 1988 estimated total Cook Inlet sockeye interception in the Kodiak Area (approximately 700,000 sockeye). This estimate was derived using data presented in Research Biologist Bruce Barrett's Regional Data Report on Shelikof Strait Sockeye Interception, R.D.R. 4K88-6, and using estimates made by the Kodiak Finfish Management staff of additional Cook Inlet bound sockeye harvested from portions of the Kodiak Management Area not covered by Barrett's report. This estimate was based upon a cursory review of historical Kodiak sockeye harvest data on run timing, average weights, differential production for systems both within and outside of the Kodiak Area, and of trends in fishing patterns.

Figure 7.

KODIAK SALMON MANAGEMENT AREA
1988 COMMERCIAL FISHING TIME
By District and Section

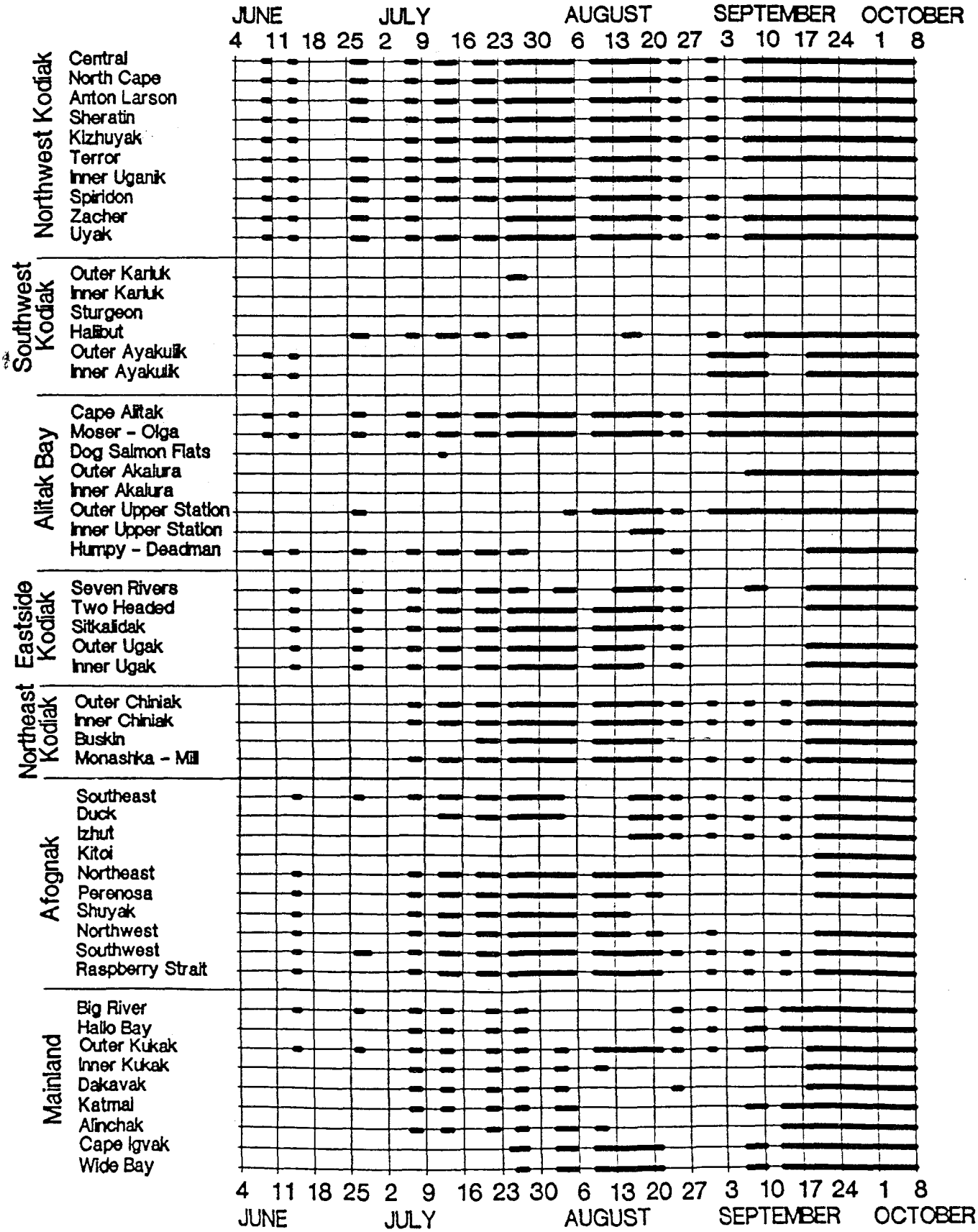


Figure 8.

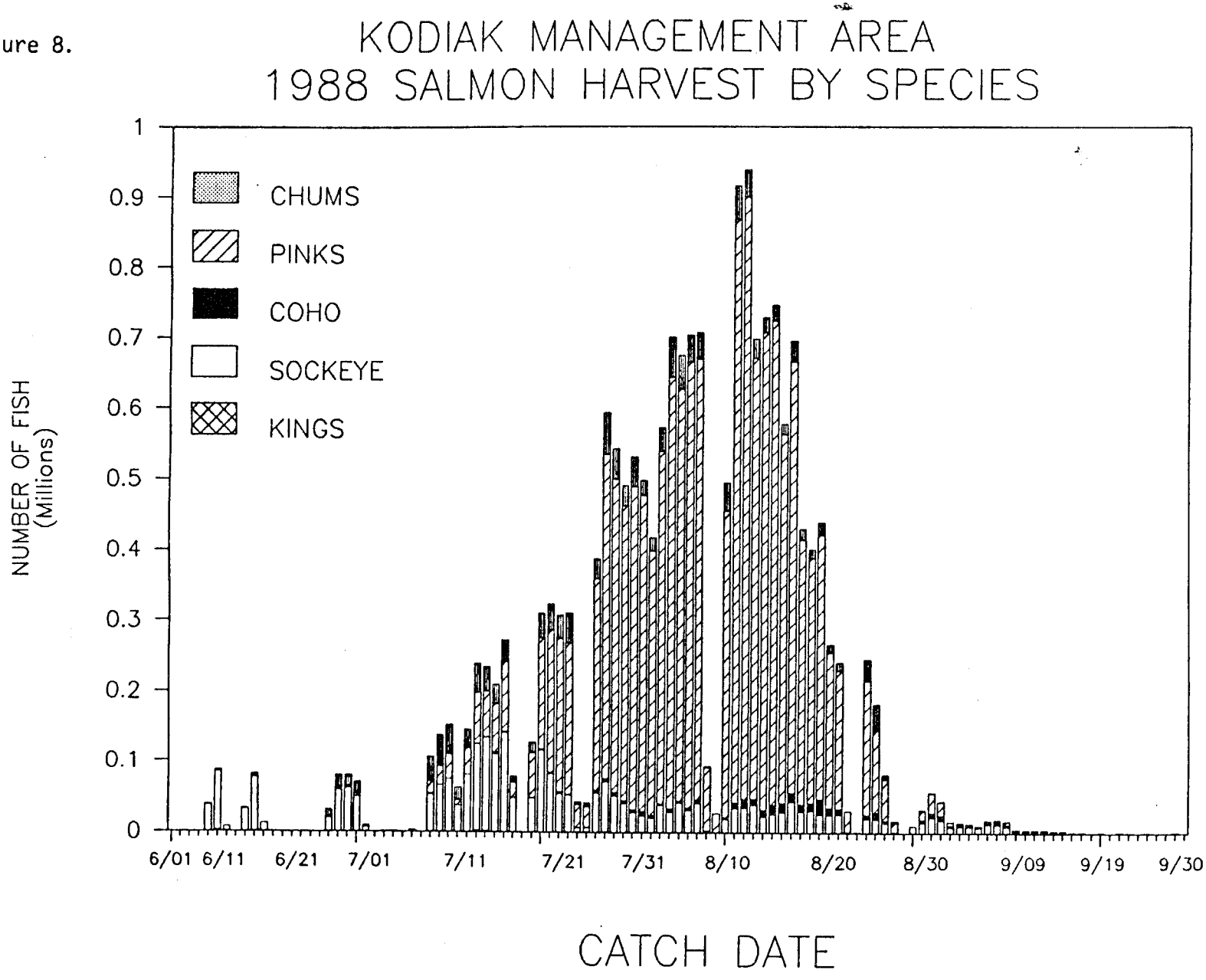

KODIAK MANAGEMENT AREA
1988 SALMON HARVEST BY SPECIES
CHUMS
PINKS
COHO
SOCKEYE
KINGS
NUMBER OF FISH
(Millions)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
6/01
6/11
6/21
7/01
7/11
7/21
7/31
8/10
8/20
8/30
9/09
9/19
9/30
CATCH DATE

Table 3.

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(All Gear Combined)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
S.W. AFOGNAK & RASPBERRY	24 06/11	148	58	0	0	65	271
(COMBINED)	25 06/18	45	178	0	0	130	353
(251-10, 20)	27 07/02	8	50	0	30	43	131
	28 07/09	11	2275	16	5738	2738	10778
	29 07/16	193	66053	192	37549	6849	110836
	30 07/23	126	18034	1069	60796	6109	86134
	31 07/30	462	2998	1984	151705	4700	161849
	32 08/06	523	3435	5815	349540	11702	371015
	33 08/13	153	1453	5245	242030	5252	254133
	34 08/20	31	1612	7148	230682	6467	245940
	35 08/27	2	228	2402	42378	622	45632
	36 09/03	19	111	999	3794	70	4993
	37 09/10	0	73	1649	617	0	2339
	38 09/17	0	1	322	4	0	327
TOTAL		**1721**	**96559**	**26841**	**1124863**	**44747**	**1294731**
N.W. AFOGNAK	25 06/18	5	1992	0	2	3	2002
(251-30, 40, 50)	28 07/09	0	527	0	87	14	628
	29 07/16	167	104365	257	24345	7878	137012
	30 07/23	64	21988	944	42262	6921	72179
	31 07/30	19	1274	295	34432	725	36745
	32 08/06	32	780	951	85807	1971	89541
	33 08/13	12	387	3396	176493	2538	182826
	34 08/20	0	102	2176	48814	172	51264
	36 09/03	0	5	281	5243	0	5529
	38 09/17	0	0	2	160	0	162
	40 10/01	0	0	199	0	0	199
TOTAL		**299**	**131420**	**8501**	**417645**	**20222**	**578087**

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
SHUYAK	29 07/16	54	34055	145	3774	2808	40836
(251-60, 70, 81)	30 07/23	58	22756	2101	37899	8255	71069
	31 07/30	0	0	1	1425	115	1541
	32 08/06	0	12	108	1225	77	1422
	33 08/13	0	61	1437	18577	0	20075
TOTAL		**112**	**56884**	**3792**	**62900**	**11255**	**134943**
PERENOSA	30 07/23	0	371	125	6717	314	7527
(251-83)	31 07/30	6	247	645	14739	448	16085
	32 08/06	16	31	333	17770	46	18196
	33 08/13	1	36	1997	73765	23	75822
	34 08/20	0	55	3427	32139	37	35658
TOTAL		**23**	**740**	**6527**	**145130**	**868**	**153288**
N.E. AFOGNAK	29 07/16	0	971	126	2472	519	4088
(251-90, 252-10, 20)	30 07/23	3	312	17	1645	699	2676
	31 07/30	3	244	497	9575	325	10644
	32 08/06	3	36	132	6091	63	6325
	33 08/13	3	311	458	19535	176	20483
	34 08/20	2	260	1285	38569	199	40315
TOTAL		**14**	**2134**	**2515**	**77887**	**1981**	**84531**
IZHUT	31 07/30	1	17	25	19363	6	19412
(252-30)	33 08/13	0	0	45	2868	13	2926
	34 08/20	2	59	2014	110185	342	112602
	35 08/27	0	0	50	591	0	641
TOTAL		**3**	**76**	**2134**	**133007**	**361**	**135581**

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
KITOI BAY (252-32)	29 07/16	0	48	0	126	23	197
	32 08/06	0	16	12	143464	0	143492
	33 08/13	0	50	15	125239	0	125304
	34 08/20	0	3	150	1630	0	1783
	36 09/03	0	0	4	9147	0	9151
TOTAL		**0**	**117**	**181**	**279606**	**23**	**279927**
DUCK BAY (252-31)	27 07/02	0	0	60	6283	75	6418
	29 07/16	2	2499	328	12027	968	15824
	30 07/23	1	654	136	9221	250	10262
	31 07/30	11	1114	1499	86747	1067	90438
	32 08/06	5	459	1513	137723	1136	140836
	34 08/20	1	64	1735	27662	114	29576
	35 08/27	0	10	522	1474	7	2013
	41 10/08	0	0	20	0	0	20
TOTAL		**20**	**4800**	**5813**	**281137**	**3617**	**295387**
S.E. AFOGNAK (252-33, 34)	25 06/18	0	398	0	24	0	422
	27 07/02	6	408	0	43	96	553
	28 07/09	0	35	1	29	4	69
	29 07/16	0	98	0	1162	517	1777
	30 07/23	0	2	0	240	7	249
	31 07/30	6	989	1564	94984	1776	99319
	32 08/06	14	473	1629	118425	917	121458
	34 08/20	1	99	3892	46944	215	51151
	35 08/27	0	1	52	416	1	470
	36 09/03	0	4	545	991	0	1540
TOTAL		**27**	**2507**	**7683**	**263258**	**3533**	**277008**

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
CENTRAL, TERROR BAY,	24 06/11	750	16057	59	335	1847	19048
INNER UGANIK, SPIRIDON	25 06/18	241	15470	2	78	2518	18309
ZACHAR, & UYAK COMBINED	26 06/25	130	4488	2	1200	8739	14559
(253-11, 12, 13, 14, 31,	27 07/02	405	15909	30	7862	33843	58049
32, 33, 35)	28 07/09	161	22279	34	67233	82867	172574
	29 07/16	472	110482	720	205118	57779	374571
(254-10, 20, 30, 40)	30 07/23	752	55489	2467	537019	63652	659379
	31 07/30	1041	31733	8317	1247219	77594	1365904
	32 08/06	916	21084	5278	1023617	64912	1115807
	33 08/13	547	18025	12791	1635925	37729	1705017
	34 08/20	244	21299	20702	1129759	19569	1191573
	35 08/27	47	6990	8069	194635	2861	212602
	36 09/03	19	11963	5897	42754	645	61278
	37 09/10	16	8438	4004	7260	238	19956
	38 09/17	3	9773	2895	1102	96	13869
	39 09/24	0	1389	496	13	9	1907
	40 10/01	0	798	754	0	5	1557
TOTAL		5744	371666	72517	6101129	454903	7005959
NORTH CAPE	24 06/11	42	3484	1	9	72	3608
ANTON LARSEN, SHERATIN,	25 06/18	3	2817	0	14	252	3086
& KIZHUYAK COMBINED	26 06/25	0	688	1	85	294	1068
(259-36, 37, 38, 39)	27 07/02	78	7606	22	1422	3753	12881
	28 07/09	32	6678	127	7890	4679	19406
	29 07/16	25	5710	232	10298	4452	20717
	30 07/23	56	10240	4283	90025	10191	114795
	31 07/30	66	4723	5376	220448	16390	247003
	32 08/06	97	1991	3368	252423	13468	271347
	33 08/13	55	1167	2591	197577	12329	213719

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
NORTH CAPE	34 08/20	14	1291	5466	135241	12063	154075
ANTON LARSEN, SHERATIN,	35 08/27	0	49	484	9344	2471	12348
& KIZHUYAK COMBINED	36 09/03	0	11	206	3836	710	4763
(continued)	37 09/10	0	1	199	311	288	799
(259-36, 37, 38, 39)	38 09/17	0	8	35	48	139	230
	39 09/24	0	0	92	0	0	92
TOTAL		**468**	**46464**	**22483**	**928971**	**81551**	**1079937**
OUTER KARLUK	25 06/18	0	33	0	0	2	35
(255-20)	27 07/02	0	10	0	33	18	61
	29 07/16	3	3310	6	20536	1440	25295
	30 07/23	22	2557	20	23426	927	26952
	31 07/30	42	5856	138	138994	2388	147418
	32 08/06	0	16	0	800	7	823
TOTAL		**67**	**11782**	**164**	**183789**	**4782**	**200584**
INNER KARLUK	31 07/30	2	1241	1	25037	364	26645
(255-10)	36 09/03	0	40	89	153	1	283
TOTAL		**2**	**1281**	**90**	**25190**	**365**	**26928**
STURGEON	27 07/02	73	1040	0	74	405	1592
(256-40)	29 07/16	1	1235	0	165	17	1418
	30 07/23	0	292	0	66	9	367
	34 08/20	0	19	91	3729	39	3878
TOTAL		**74**	**2586**	**91**	**4034**	**470**	**7255**
HALIBUT BAY	24 06/11	4	158	0	0	0	162
(256-25, 30)	25 06/18	2	482	0	0	44	528
	26 06/25	254	11299	4	536	1791	13884

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
HALIBUT BAY (continued) (256-25, 30)	27 07/02	460	63066	5	3344	6005	72880
	28 07/09	97	37765	16	1866	4863	44607
	29 07/16	114	85499	70	10694	3077	99454
	30 07/23	117	52805	97	13423	1504	67946
	31 07/30	116	36432	419	37265	959	75191
	34 08/20	40	34776	4145	126536	697	166194
	35 08/27	0	0	21	0	0	21
	36 09/03	4	8255	2251	1869	112	12491
	37 09/10	2	5122	864	432	30	6450
	38 09/17	0	690	127	45	5	867
TOTAL		**1210**	**336349**	**8019**	**196010**	**19087**	**560675**
INNER & OUTER AYAKULIK (256-10, 20)	24 06/11	999	61015	3	34	1301	63352
	25 06/18	1551	55979	0	64	2096	59690
	27 07/02	1	255	0	2	28	286
	28 07/09	0	1196	0	576	160	1932
	29 07/16	6	2045	0	290	241	2582
	30 07/23	0	1296	0	402	61	1759
	31 07/30	5	8185	30	7551	128	15899
	36 09/03	0	1099	7312	1243	25	9679
	37 09/10	0	1134	3565	330	1	5030
TOTAL		**2562**	**132204**	**10910**	**10492**	**4041**	**160209**
CAPE ALITAK (257-10, 20)	24 06/11	132	11758	0	0	175	12065
	25 06/18	75	11674	1	1	758	12509
	27 07/02	83	16411	0	125	2233	18852
	28 07/09	46	30391	15	376	6392	37220
	29 07/16	36	29852	109	4928	10625	45550
	30 07/23	9	39717	70	8277	6373	54446
	31 07/30	22	41066	89	18440	2401	62018

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
CAPE ALITAK (continued) (257-10, 20)	32 08/06	59	85465	673	80481	4711	171389
	33 08/13	37	52710	1327	66137	4530	124741
	34 08/20	25	70889	4625	46567	3116	125222
	35 08/27	1	13648	2403	4371	2430	22853
	36 09/03	1	16905	4528	3015	1000	25449
	37 09/10	1	24321	4119	2149	700	31290
	38 09/17	0	258	155	27	11	451
TOTAL		**527**	**445065**	**18114**	**234894**	**45455**	**744055**
MOSER/OLGA BAY & DOG SALMON FLATS (257-40, 41)	23 06/04	0	72	0	0	0	72
	24 06/11	12	32000	6	0	233	32251
	25 06/18	5	25906	5	1	546	26463
	26 06/25	0	1257	0	0	47	1304
	27 07/02	11	51323	15	0	3247	54596
	28 07/09	9	56677	6	57	5615	62364
	29 07/16	4	39653	20	391	4989	45057
	30 07/23	8	37058	53	1101	886	39106
	31 07/30	2	68901	112	7063	914	76992
	32 08/06	23	75770	341	23569	1710	101413
	33 08/13	6	62553	985	57510	4179	125233
	34 08/20	5	56741	3348	35619	5700	101413
	35 08/27	1	22272	1769	5327	1767	31136
	36 09/03	0	25127	2069	2587	1635	31418
	37 09/10	0	15261	1298	780	2077	19416
	38 09/17	0	3208	245	87	161	3701
	39 09/24	0	200	0	0	0	200
TOTAL		**86**	**573979**	**10272**	**134092**	**33706**	**752135**

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
INNER & OUTER AKALURA &	27 07/02	0	6716	0	0	122	6838
INNER & OUTER UPPER	32 08/06	0	2502	2	71	2	2577
STATION	33 08/13	0	30318	36	1324	38	31716
(257-30)	34 08/20	0	14164	370	985	31	15550
	35 08/27	0	7126	389	511	54	8080
	36 09/03	0	5872	420	85	10	6387
	37 09/10	0	77	8	5	11	101
	40 10/01	0	0	0	2	1	3
TOTAL		**0**	**66775**	**1225**	**2983**	**269**	**71252**
HUMPY/DEADMAN	24 06/11	0	1452	0	0	31	1483
(257-50, 60, 70)	25 06/18	1	1583	0	0	79	1663
	27 07/02	1	5252	0	0	370	5623
	28 07/09	1	1350	0	20	423	1794
	29 07/16	1	10239	17	494	670	11421
	30 07/23	6	11537	27	2791	1069	15430
	31 07/30	1	5792	11	6777	573	13154
	32 08/06	0	187	12	2714	59	2972
	35 08/27	0	862	323	970	10697	12852
TOTAL		**11**	**38254**	**390**	**13766**	**13971**	**66392**
SEVEN RIVERS	28 07/09	0	308	0	0	408	716
(258-70, 80, 83, 85, 90)	29 07/16	0	168	0	13	1755	1936
	30 07/23	0	235	10	1334	3317	4896
	31 07/30	0	9	0	11462	642	12113
	32 08/06	0	243	7	250240	386	250876
	33 08/13	0	285	119	253679	266	254349
	34 08/20	1	62	560	175782	354	176759
	35 08/27	0	0	19	5450	1	5470
TOTAL		**1**	**1310**	**715**	**697960**	**7129**	**707115**

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
TWO HEADED	26 06/25	0	64	0	4	5	73
(258-54, 55, 60)	28 07/09	0	186	0	10	30	226
	30 07/23	2	410	22	1814	317	2565
	31 07/30	0	410	36	12869	1512	14827
	32 08/06	0	685	93	40518	2276	43572
	33 08/13	6	778	416	55991	1675	58866
	34 08/20	3	310	1518	14149	1465	17445
TOTAL		11	2843	2085	125355	7280	137574
SITKALIDAK	26 06/25	1	189	0	1	23	214
(258-10, 20, 30, 40,	27 07/02	3	503	5	35	174	720
51, 52, 53)	28 07/09	42	4778	25	560	4364	9769
	29 07/16	94	41106	5531	19506	25673	91910
	30 07/23	57	2970	237	13112	21711	38087
	31 07/30	18	3112	1016	109942	28767	142855
	32 08/06	38	2174	422	171620	24063	198317
	33 08/13	31	1546	2627	252833	28589	285626
	34 08/20	10	1194	6373	115247	23273	146097
	35 08/27	9	31	613	4626	7237	12516
TOTAL		303	57603	16849	687482	163874	926111
OUTER & INNER UGAK	27 07/02	39	1186	0	0	13	1238
(259-40, 41, 42)	28 07/09	295	5963	0	332	2697	9287
	29 07/16	613	4257	0	827	4926	10623
	30 07/23	265	1712	8	1563	8140	11688
	31 07/30	90	526	5	3888	3786	8295
	32 08/06	22	21	2	3312	9963	13320
	33 08/13	1	2	8	2251	4590	6852
	34 08/20	0	4	20	2500	1538	4062

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
OUTER & INNER UGAK	35 08/27	3	3	613	317	2157	3093
(continued)	37 09/10	0	140	0	0	0	140
(259-40, 41, 42)	39 09/24	0	0	189	0	0	189
TOTAL		1328	13814	845	14990	37810	68787
OUTER CHINIAK	30 07/23	0	0	0	403	1569	1972
(259-21, 25)	31 07/30	12	15	1	9457	1773	11258
	32 08/06	27	37	82	38638	8724	47508
	33 08/13	9	11	170	48179	6022	54391
	34 08/20	1	5	430	28976	2337	31749
	35 08/27	0	0	37	43	165	245
	38 09/17	0	230	160	1	51	442
	39 09/24	0	0	814	148	11	973
	40 10/01	0	0	0	185	8	193
TOTAL		49	298	1694	126030	20660	148731
INNER CHINIAK	28 07/09	1	0	0	13	191	205
(259-23, 24)	29 07/16	39	15	0	1085	296	1435
	30 07/23	8	52	29	3142	6799	10030
	31 07/30	4	1	2	3722	1411	5140
	32 08/06	6	1	8	27954	3754	31723
	33 08/13	4	4	83	37879	8244	46214
	34 08/20	5	2	554	10449	6919	17929
	35 08/27	2	20	730	1679	2398	4829
	36 09/03	5	1	368	28	94	496
	37 09/10	0	0	0	3	7	10
	39 09/24	0	1	58	0	1	60
	40 10/01	0	0	30	0	0	30
TOTAL		74	97	1862	85954	30114	118101

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
BUSKIN RIVER (259-22)	30 07/23	0	6	0	9873	3457	13336
	31 07/30	3	57	9	9516	989	10574
	32 08/06	1	2	2	11156	2346	13507
	33 08/13	2	27	136	82299	9251	91715
	34 08/20	0	0	107	5270	1177	6554
	35 08/27	0	0	0	26	70	96
TOTAL		**6**	**92**	**254**	**118140**	**17290**	**135782**
MONASHKA/MILL BAY (259-10)	28 07/09	1	190	0	277	315	783
	31 07/30	0	0	1	4937	22	4960
	32 08/06	4	3	6	20244	76	20333
	33 08/13	1	41	192	54286	3125	57645
	34 08/20	0	10	120	9377	78	9585
TOTAL		**6**	**244**	**319**	**89121**	**3616**	**93306**
BIG RIVER (262-10, 15)	27 07/02	122	988	0	0	715	1825
	28 07/09	3	251	0	31	622	907
	29 07/16	6	1621	44	1417	4173	7261
	30 07/23	2	2939	116	743	956	4756
	31 07/30	0	554	1	16900	21907	39362
	35 08/27	0	3	3292	205	247	3747
	36 09/03	0	2	683	30	8	723
	37 09/10	0	2	138	56	0	196
TOTAL		**133**	**6360**	**4274**	**19382**	**28628**	**58777**
HALLO BAY (262-20)	29 07/16	20	1202	26	284	2987	4519
	31 07/30	1	12	0	3706	7775	11494
	35 08/27	0	0	640	625	179	1444
	36 09/03	0	0	90	2	10	102
TOTAL		**21**	**1214**	**756**	**4617**	**10951**	**17559**

Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK
(continued)

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
OUTER KUKAK	25 06/18	1	1602	0	0	22	1625
(262-25, 30)	26 06/25	0	600	0	0	25	625
	27 07/02	68	3203	3	69	982	4325
	28 07/09	12	356	0	50	177	595
	30 07/23	0	819	21	164	278	1282
	32 08/06	3	20	15	2791	1311	4140
	33 08/13	0	21	12	1069	9701	10803
	34 08/20	9	28	113	3060	14834	18044
	35 08/27	0	4	219	2556	26282	29061
	36 09/03	0	0	0	0	50	50
TOTAL		**93**	**6653**	**383**	**9759**	**53662**	**70550**
INNER KUKAK	29 07/16	0	2	0	1	1010	1013
(262-27)	32 08/06	1	26	30	3500	27913	31470
	33 08/13	3	31	20	1340	29535	30929
	34 08/20	10	16	83	1135	10988	12232
	35 08/27	1	4	94	10075	15196	25370
	36 09/03	0	2	18	80	10	110
TOTAL		**15**	**81**	**245**	**16131**	**84652**	**101124**
DAKAVAK	28 07/09	388	48521	41	3259	18713	70922
(262-35, 40, 45, 50, 55)	29 07/16	3656	73106	465	4289	22181	103697
	30 07/23	285	71021	1071	13905	13019	99301
	31 07/30	1395	27576	3139	20916	16235	69261
	32 08/06	156	573	898	25694	8305	35626
	33 08/13	0	707	53	18769	687	20216
	35 08/27	2	13	159	110271	3454	113899
TOTAL		**5882**	**221517**	**5826**	**197103**	**82594**	**512922**

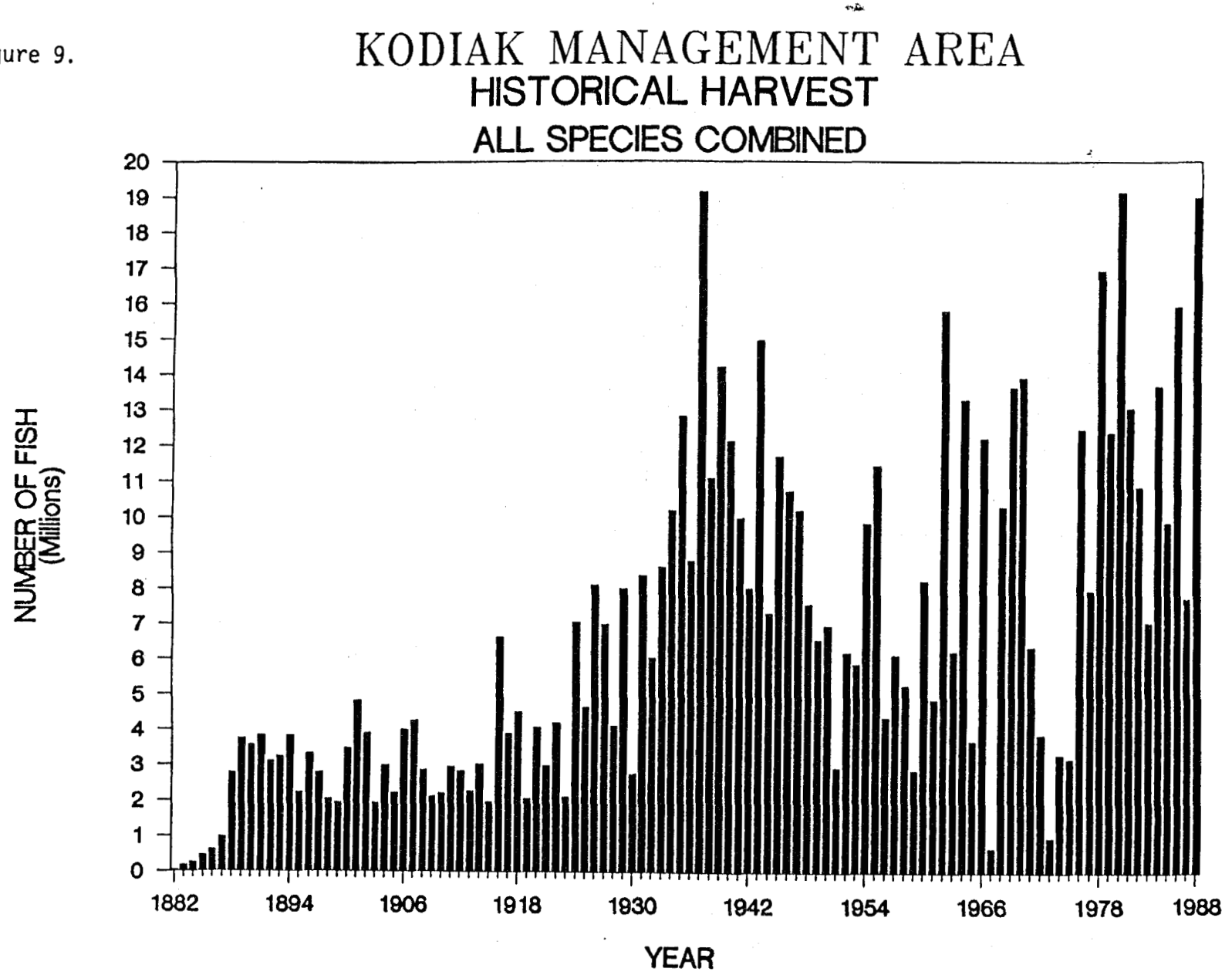
Table 3. (continued)

1988 KODIAK MANAGEMENT AREA
COMMERCIAL SALMON HARVEST
BY MANAGEMENT UNIT BY STATISTICAL WEEK

SECTION (STAT. AREA)	STAT WEEK/ WEEK ENDING	NUMBER OF SALMON KING	RED	COHO	PINK	CHUM	TOTAL
KATMAI	28 07/09	75	5427	0	340	2476	8318
(262-60)	29 07/16	40	1230	14	249	525	2058
	30 07/23	0	738	5	142	119	1004
TOTAL		**115**	**7395**	**19**	**731**	**3120**	**11380**
ALINCHAK	28 07/09	136	5679	29	895	2817	9556
(262-65, 70)	29 07/16	130	14757	67	2204	4269	21427
	30 07/23	4	72	3	300	2310	2689
	31 07/30	0	382	10	5186	3094	8672
	32 08/06	14	112	337	98147	25819	124429
	33 08/13	3	191	475	46677	8759	56105
TOTAL		**287**	**21193**	**921**	**153409**	**47068**	**222878**
CAPE IGVAK	31 07/30	405	25210	6354	158514	25554	216037
(262-75, 80, 90, 95)	32 08/06	265	3486	2653	253713	12841	272958
	33 08/13	281	3402	18668	308394	13313	344058
	34 08/20	98	2104	13775	122136	3363	141476
	35 08/27	1	18	201	945	41	1206
TOTAL		**1050**	**34220**	**41651**	**843702**	**55112**	**975735**
WIDE BAY	31 07/30	0	148	117	33982	5471	39718
(262-85)	32 08/06	3	120	10	186205	9509	195847
	33 08/13	3	73	164	230144	10000	240384
	34 08/20	0	40	398	53255	1387	55080
TOTAL		**6**	**381**	**689**	**503586**	**26367**	**531029**

MANAGEMENT AREA GRAND TOTAL:

Figure 9.



ALLSPEC

Table 4.

KODIAK MANAGEMENT AREA
HISTORICAL SALMON HARVEST BY SPECIES BY YEAR
1882 - 1988

YEAR	KINGS	REDS	COHOS	PINKS	CHUMS	TOTAL
1882	-	59,000	-	-	-	59,000
1883	-	189,000	-	-	-	189,000
1884	-	282,000	-	-	-	282,000
1885	-	469,000	-	-	-	469,000
1886	-	646,000	-	-	-	646,000
1887	-	1,005,000	-	-	-	1,005,000
1888	-	2,781,000	-	-	-	2,781,000
1889	-	3,755,000	-	-	-	3,755,000
1890	-	3,593,000	-	-	-	3,593,000
1891	-	3,846,000	-	-	-	3,846,000
1892	-	3,126,000	-	-	-	3,126,000
1893	-	3,245,000	-	-	-	3,245,000
1894	-	3,830,000	-	-	-	3,830,000
1895	-	2,247,000	8,000	-	-	2,255,000
1896	-	3,329,000	-	-	-	3,329,000
1897	-	2,786,000	2,000	-	-	2,788,000
1898	-	2,033,000	19,000	-	-	2,052,000
1899	1,000	1,935,000	32,000	-	-	1,968,000
1900	5,000	3,450,000	32,000	-	-	3,487,000
1901	4,000	4,826,000	-	2,000	-	4,832,000
1902	3,000	3,868,000	35,000	-	-	3,906,000
1903	1,000	1,826,000	120,000	10,000	-	1,957,000
1904	3,000	2,875,000	103,000	5,000	-	2,986,000
1905	2,000	2,142,000	87,000	-	-	2,231,000
1906	4,000	3,980,000	24,000	-	-	4,008,000
1907	4,000	4,232,000	38,000	-	-	4,274,000
1908	3,000	2,488,000	74,000	286,000	-	2,851,000
1909	4,000	1,915,000	52,000	154,000	-	2,125,000
1910	2,000	1,955,000	44,000	215,000	-	2,216,000
1911	1,000	2,686,000	22,000	230,000	6,000	2,945,000
1912	1,000	2,246,000	17,000	547,000	25,000	2,836,000
1913	1,000	1,663,000	28,000	590,000	4,000	2,286,000
1914	1,000	1,255,000	32,000	1,726,000	13,000	3,027,000
1915	1,000	1,664,000	52,000	252,000	20,000	1,989,000
1916	1,000	3,373,000	50,000	3,182,000	29,000	6,635,000
1917	1,000	3,646,000	30,000	225,000	16,000	3,918,000
1918	2,000	1,894,000	78,000	2,467,000	82,000	4,523,000
1919	2,000	1,619,000	104,000	283,000	60,000	2,068,000
1920	2,000	1,958,000	89,000	1,977,000	55,000	4,081,000
1921	1,000	2,858,000	46,000	68,000	25,000	2,998,000
1922	1,000	1,097,000	120,000	2,766,000	224,000	4,208,000
1923	2,000	1,090,000	78,000	929,000	39,000	2,138,000
1924	1,000	1,408,000	121,000	5,435,000	118,000	7,083,000
1925	2,000	1,693,000	93,000	2,674,000	212,000	4,674,000
1926	1,000	3,015,000	174,000	4,607,000	325,000	8,122,000
1927	4,000	1,155,000	152,000	5,297,000	418,000	7,026,000
1928	3,000	1,592,000	291,000	1,535,000	726,000	4,147,000
1929	3,000	712,000	144,000	6,108,000	1,058,000	8,025,000

Table 4. (continued)

KODIAK MANAGEMENT AREA
HISTORICAL SALMON HARVEST BY SPECIES BY YEAR
1882 - 1988
(Continued)

YEAR	KINGS	REDS	COHOS	PINKS	CHUMS	TOTAL
1930	5,000	466,000	229,000	1,651,000	419,000	2,770,000
1931	2,000	1,183,000	170,000	6,840,000	184,000	8,379,000
1932	2,000	1,058,000	52,000	4,720,000	237,000	6,069,000
1933	1,000	1,428,000	91,000	6,574,000	537,000	8,631,000
1934	3,000	1,829,000	86,000	7,642,000	662,000	10,219,000
1935	2,000	1,614,000	63,000	10,781,000	382,000	12,842,000
1936	5,000	2,658,000	163,000	5,648,000	329,000	8,803,000
1937	2,000	1,882,000	134,000	16,788,000	346,000	19,152,000
1938	3,000	1,966,000	133,000	8,398,000	640,000	11,140,000
1939	4,000	1,786,000	64,000	11,741,000	641,000	14,236,000
1940	3,000	1,318,000	163,000	9,997,000	674,000	12,155,000
1941	5,000	1,730,000	208,000	7,601,000	445,000	9,989,000
1942	3,000	1,281,000	106,000	6,093,000	565,000	8,048,000
1943	2,000	1,991,000	61,000	12,480,000	454,000	14,988,000
1944	2,000	1,818,000	45,000	4,956,000	507,000	7,328,000
1945	4,000	2,041,000	79,000	9,045,000	559,000	11,728,000
1946	1,000	839,000	71,000	9,546,000	298,000	10,755,000
1947	1,000	994,000	72,000	8,857,000	295,000	10,219,000
1948	1,000	1,260,000	32,000	5,958,000	331,000	7,582,000
1949	1,000	892,000	54,000	4,928,000	700,000	6,575,000
1950	2,000	921,000	41,000	5,305,000	685,000	6,954,000
1951	2,000	470,000	48,000	2,006,000	422,000	2,948,000
1952	1,000	631,000	36,000	4,554,000	984,000	6,206,000
1953	3,000	392,000	39,000	4,948,000	490,000	5,872,000
1954	1,000	329,000	56,000	8,325,000	1,140,000	9,851,000
1955	2,000	164,000	35,000	10,794,000	480,000	11,475,000
1956	1,000	306,000	54,000	3,349,000	660,000	4,370,000
1957	1,000	234,000	35,000	4,691,000	1,152,000	6,113,000
1958	2,000	288,000	21,000	4,039,000	931,000	5,281,000
1959	2,000	330,000	15,000	1,800,000	734,000	2,881,000
1960	2,000	362,000	54,000	6,685,000	1,133,000	8,236,000
1961	1,000	408,000	29,000	3,296,000	519,000	4,883,000
1962	1,000	785,000	54,000	14,189,000	795,000	15,824,000
1963	-	407,000	57,000	5,480,000	305,000	6,249,000
1964	1,000	478,000	36,000	11,862,000	932,000	13,309,000
1965	1,000	346,000	27,000	2,887,000	431,000	3,692,000
1966	1,000	632,000	68,000	10,756,000	763,000	12,220,000
1967	1,000	284,000	10,000	188,000	221,000	704,000
1968	2,000	760,000	56,000	8,761,000	750,000	10,329,000
1969	2,000	604,000	35,000	12,493,000	537,000	13,671,000
1970	1,000	917,000	66,000	12,045,000	919,000	13,948,000
1971	1,000	478,000	23,000	4,333,000	1,541,000	6,376,000
1972	1,000	222,000	14,000	2,486,000	1,165,000	3,888,000
1973	1,000	167,000	4,000	512,000	318,000	1,002,000
1974	1,000	409,000	14,000	2,635,000	248,000	3,307,000
1975	-	137,000	25,000	2,945,000	85,000	3,192,000
1976	1,000	641,000	24,000	11,078,000	740,000	12,484,000

Table 4. (continued)

KODIAK MANAGEMENT AREA
HISTORICAL SALMON HARVEST BY SPECIES BY YEAR
1882 - 1988
(Continued)

YEAR	KINGS	REDS	COHOS	PINKS	CHUMS	TOTAL
1977	1,000	623,000	28,000	6,252,000	1,072,000	7,976,000
1978	3,000	1,072,000	49,000	15,004,000	814,000	16,942,000
1979	2,000	632,000	141,000	11,287,000	358,000	12,420,000
1980	1,000	651,000	139,000	17,290,000	1,076,000	19,157,000
1981	1,000	1,289,000	122,000	10,337,000	1,345,000	13,094,000
1982	1,000	1,205,000	344,000	8,076,000	1,266,000	10,892,000
1983	4,000	1,232,000	158,000	4,603,000	1,085,000	7,082,000
1984	5,000	1,951,000	230,000	10,884,000	649,000	13,719,000
1985	5,000	1,843,000	284,000	7,335,000	431,000	9,898,000
1986	4,000	3,155,000	168,000	11,504,000	1,126,000	15,957,000
1987	5,000	1,793,000	192,000	5,073,000	682,000	7,745,000
1988	22,000	2,698,000	303,000	14,262,000	1,426,000	18,711,000
Average	2,000	1,571,000	70,000	4,510,000	399,000	6,552,000

Table 5.

KODIAK MANAGEMENT AREA
1988 COMMERCIAL SALMON HARVEST AND VALUE BY GEAR[1/]
(Values Expressed in Millions)

	King	Reds	Cohos	Pinks	Chums	Total	%
Purse Seine							
Total No.s	.021	1.839	.267	11.949	1.220	15.297	.82
Avg. Wt.	13.0	5.9	8.4	3.8	9.0	-	-
Total Lbs.	.275	10.879	2.232	44.836	10.993	69.215	.82
Avg. $/Lb.	$1.25	$2.55	$1.50	$0.70	$1.00	-	-
Ex-Vessel $	$.343	$27.742	$3.348	$31.385	$10.991	$73.811	.78
For 323 Permits							
- Avg. $ Value	$.001	$.086	$.010	$.097	$.034	$.228	-
- %	< .01	.38	.04	.43	.15	1.00	
Beach Seine							
Total No.s	< .001	.002	< .001	.234	.022	.258	.01
Avg. Wt.	17.6	5.7	8.3	3.8	9.0	-	-
Total Lbs.	.001	.012	.007	.891	.196	1.107	.01
Avg. $/Lb.	$1.25	$2.55	$1.50	$0.70	$1.00	-	-
Ex-Vessel $	$.001	$0.031	$.011	$.624	$.196	$.863	.01
For 21 Permits							
- Avg. $ Value	$< .001	$.002	$.001	$.030	$.009	$.041	-
- %	< .01	.05	< .01	.73	.22	1.00	
Set Gillnet							
Total No.s	.001	.857	.036	2.079	.184	3.157	.17
Avg. Wt.	17.3	5.3	9.2	4.0	8.1	-	-
Total Lbs.	.020	4.577	.331	8.228	1.499	14.655	.17
Avg. $/Lb.	$1.25	$2.55	$1.50	$0.70	$1.00	-	-
Ex-Vessel $	$.025	$11.671	$.540	$5.760	$1.499	$19.495	.21
For 180 Permits							
- Avg. $ Value	$< .001	$.065	$010	$.032	$008	$.115	-
- %	< .01	.56	.09	.28	.07	1.00	
Total All Gear							
Total No.s	.022	2.698	.303	14.262	1.426	18.711	1.00
Avg. Wt.	13.2	5.7	8.5	3.8	8.9	-	-
Total Lbs.	.296	15.378	2.576	54.196	12.691	85.137	1.00
Avg. $/Lb.	$1.25	$2.55	$1.50	$0.70	$1.00	-	-
Ex-Vessel $	$.370	$39.214	$3.863	$37.937	$12.691	$94.075	1.00
	-	-	-	-	-	-	-
Kitoi Hatchery							
Kitoi No.s	.000	< .001	< .001	.297	.000	.297	-
Avg. Wt.	.000	4.0	6.7	3.5	-	-	-
Total Lbs.	.000	< .001	< .001	1.050	.000	1.050	-
Avg. $/Lb.	$.000	$< .001	$< .001	$0.70	.000	-	-
Ex-Vessel $	$.000	$< .001	$< .001	$.735	.000	$.735	-

[1/]Numbers and pounds of fish are derived from fish ticket summaries. There were 19,402 fish tickets generated in 1988; each fish ticket represents a "landing". Each gear type had the following number of landings: Purse seine: 11,128, Beach seine: 465 and Set gillnet: 7,779. Average $/lb. figures are derived from in-season average prices and do not reflect post-season settlements.

Table 6.

KODIAK MANAGEMENT AREA
ESTIMATED SALMON HARVEST AND VALUE BY GEAR TYPE[1/]
1970 - 1988

Year	Total Catch[2/]	Total Value	Average Purse Seine	Average Beach Seine	Average Set Net
1970	13,949,000	$21,658,000	$41,880	$10,470	$21,083
1971	6,376,000	4,973,000	13,397	2,919	3,015
1972	3,890,000	3,909,000	9,233	647	1,451
1973	1,001,000	2,094,000	5,075	251	852
1974	3,323,000	4,808,000	15,993	4,406	4,828
1975	3,187,000	3,831,000	13,300	5,600	3,849
1976	12,484,000	16,976,000	43,017	11,035	14,481
1977	7,977,000	21,000,000	48,382	12,434	19,351
1978	16,942,000	32,000,000	72,158	15,731	25,495
1979	12,420,000	25,000,000	48,906	18,839	23,000
1980	19,157,000	31,000,000	69,117	7,710	21,578
1981	13,057,000	33,000,000	75,257	17,312	26,231
1982	10,892,000	16,230,000	31,868	10,549	30,554
1983	7,082,000	14,530,000	32,832	5,886	19,338
1984	13,678,000	26,202,000	72,018	12,577	26,777
1985	9,898,000	20,782,000	45,303	6,451	31,296
1986	15,956,959	39,106,000	92,933	9,517	69,644
1987	7,745,000	28,113,000	71,170	12,780	115,000 WRONG # NEEDS correction
1988	18,711,000	94,075,000	228,000	41,000	115,000
19 Year Average 1970-1988	**10,406,000**	**$19,093,333**	**$44,322**	**$9,092**	**$21,833**

1/Value is an "ex-vessel value" based upon ADF&G's average estimate of in-season grounds price; It does not include additional value associate associated with "dock deliveries" and "post-season settlements".

2/Includes total commercial harvest; excludes test fishery and Kitoi cost-recovery fishery harvests.

Table 7.

KODIAK MANAGEMENT AREA
SUMMARY OF 1988 COMMERCIAL SALMON BUYERS AND PROCESSORS[1/]

Buyers/Processors	Shorebased Processors			Floating Processors			Product	
	Kodiak City	Kodiak Borough	Other Areas	Kodiak City	Kodiak Borough	Other Areas	Canned	Frozen
Alaska Fresh Seafoods	X							X
ALCOD	X							X
All Alaskan Seafoods	X							X
Alaska Pacific Seafoods	X						X	X
Chignik Pride Fish.-Chignik			X					X
Chugach Fisheries-Uganik		X					X	X
Columbia Ward-Alitak		X					X	X
Columbia Ward-Port Bailey		X					X	X
Cook Inlet Processors	X							X
East Point Seafoods	X							X
(M/V Mr. B.)					X			X
International Seafoods	X							X
John Cabot Fish.-Seldovia			X					X
Kodiak King Crab, Inc.	X						X	X
Kodiak Salmon Company								
Larsen Bay		X					X	
(M/V Bristol Monarch)					X			X
Pacific Producer								
(M/V Pacific Producer)					X			X
Ursins Seafoods	X							X
Western Alaska Seafoods	X							X
Total: 16/19	10	4	2	0	3	0	6	18

[1/]Approximately 125 tenders were utilized in the Kodiak Area for transporting salmon from the fishing grounds to the processing plants.

Table 8. KODIAK MANAGEMENT AREA

SUMMARY OF 1988 GEAR PARTICIPATION
AMOUNT POTENTIALLY FISHABLE VS. AMOUNT ATUALLY FISHED

		1988 LIMITED ENTRY PERMITS[1,2]	
		Fishable	Fished
Purse Seine	Resident	287	-
	Non-Resident	93	-
	Sub-total	380	323
Beach Seine	Resident	30	-
	Non-Resident	2	-
	Sub-total	32	21
Set Gillnet	Resident	149	-
	Non-Resident	39	-
	Sub-total	188	180
Area Total	Resident	466	-
	Non-Resident	134	-
	Total	**600**	**524**

1/ Includes 5 interim purse seine permits and 1 interim beach seine permit/

2/ Excludes 6 unpaid purse seine permits and 1 unpaid beach seine permit.

Table 9.

KODIAK MANAGEMENT AREA
NUMBER OF ACTIVE SALMON LIMITED ENTRY PERMITS[1/]
1975 - 1988

YEAR	01 PURSE SEINE	02 BEACH SEINE	04 SET GILLNET	TOTAL
1975	280	8	116	404
1976	325	17	140	482
1977	312	22	142	476
1978	345	24	152	521
1979	340	28	154	522
1980	360	29	158	547
1981	325	30	169	524
1982	338	28	169	535
1983	342	27	174	543
1984	298	25	168	491
1985	272	21	169	467
1986	288	15	175	478
1987	298	18	173	489
1988	323	21	180	523
14 Year Average (1975-1988)	**317**	**22**	**158**	**498**

[1/]Active permits represents permits making landings.

Table 10. KODIAK MANAGEMENT AREA
HISTORICAL INDEXED SALMON ESCAPEMENTS BY SPECIES[1]

YEAR	CHINOOK	SOCKEYE	COHO	PINKS	CHUMS
1962	-	922,500	-	4,600,000	297,900
1963	-	502,227	-	1,026,075	75,520
1964	-	600,346	-	3,360,000	261,429
1965	-	561,980	-	772,874	67,156
1966	-	652,578	-	2,100,000	143,700
1967	-	720,683	-	698,710	136,079
1968	703	645,612	-	2,800,000	121,000
1969	7,752	592,020	-	1,581,335	77,285
1970	3,900	573,603	-	3,392,577	123,150
1971	4,524	456,197	-	1,070,173	249,327
1972	3,049	605,491	-	1,053,391	335,115
1973	4,762	543,111	-	604,592	258,044
1974	1,622	995,925	-	2,041,099	86,383
1975	3,059	704,801	-	1,100,555	156,761
1976	8,411	1,075,226	-	3,105,320	312,914
1977	13,824	1,269,374	59,095	2,212,488	742,384
1978	14,677	1,000,353	37,479	5,006,273	482,956
1979	14,441	1,410,800	94,000	3,067,647	607,430
1980	5,850	1,831,748	28,000	6,492,822	830,070
1981	15,720	1,391,593	59,000	3,188,869	741,981
1982	10,773	1,603,692	86,000	5,370,049	1,023,923
1983	27,445	1,300,506	104,000	2,089,704	824,954
1984	14,429	1,467,780	123,000	4,512,124	682,936
1985	13,876	2,574,539	191,417	3,168,197	727,883
1986	11,046	2,001,279	170,000	4,068,615	655,817
1987	23,744	1,551,543	153,000	2,978,510	641,579
1988[2]	35,000	1,650,000	105,000	4,400,000	720,000
Average	14,600[3]	1,102,220[3]	95,199[3]	2,809,704[4]	689,000[3]
Odd Year Average (1963-1988)				1,812,287[5]	
Even Year Average (1962-1988)				3,735,867[6]	

[1] Indexed escapement represents total indexed escapement by species as determined by summations of peak abundance estimates for the set of species-specific streams investigated each year. For all species except chums this will include totals summed from both actual weir counts and from aerial/foot estimates. For the data set shown, errors associated with this type data compilation do not detract from depicted trends.

[2] Preliminary as of 11/28/88

[3] 12 year average (1976-1987)

[4] 26 year average (1962-1987)

[5] 13 year even year average (1962-1986)

[6] 13 year odd year average (1963-1987)

KODIAK MANAGEMENT AREA
1988 ESCAPEMENT SUMMARY FOR SYSTEMS WITH FISH WEIRS[1/2/]

Weir Location	Dates Installed	Dates Removed	Salmon Species Enumerated* Kings	Reds	Coho	Pinks	Chums	Total
1. Karluk	5/25	9/17	13,337	578,816*	12,083*	711,676*	108	1,316,020
2. Red River	5/25	9/2	21,370	291,774*	19,476*	397,409*	184	730,213
3. Dog Salmon	6/2	9/10	303	248,055**	3,543*	59,489*	30,680	342,070
4. Fraser Lake	6/20	8/17	212**	246,217*	0	0	6**	246,435
5. Upper Station	5/20	9/12	1	306,560*	3,813*	894	3	311,271
6. Akalura	5/21	9/19	1	38,468*	5,965*	28,010	0	72,444
7. Silver Salmon	8/24	9/21	0	0	2,263*	75	0	2,338
8. Saltery	6/16	9/12	12	25,654*	4,702*	7,645*	28	38,041
9. Buskin	5/2	9/24	1	12,144*	6,782*	203,684*	84	222,695
10. Litnik	5/20	9/8	2	39,012*	9,772*	148,206*	11	197,003
11. Thorsheim	6/2	7/12	0	4,217*	0	0	0	4,217
12. Paul's Bay	5/30	9/3	0	22,794*	5,563*	434	3	28,794
13. Perenosa (Portage)	8/7	9/4	0	26	2,354*	56,475*	0	58,855
14. Shuyak #705	8/9	9/5	0	0	973*	58	0	1,031
15. Shuyak #706	8/13	9/6	0	0	967*	1,241	0	2,208
16. Shuyak #601	8/14	10/7	0	0	2,772*	669	0	3,441
TOTAL			35,027	1,565,682	81,028	1,615,965	31,101	3,328,803

* Primary Management Species

**Numbers not used in species total.

1/Escapement figures are total escapement figures that include actual total counts of fish passed through the weir plus estimates of fish that spawned below the weir.

2/This weir escapement data represents the following proportion of the 1988 total indexed escapement derived from aerial surveys, foot surveys and weir counts combined: Kings 99%, Reds 95%, Coho 85%, Pink 36%, Chum 5%.

Table 12. KODIAK MANAGEMENT AREA
HISTORICAL WEIR ESCAPEMENT DATA
FOR MAJOR SOCKEYE SYSTEMS[1/]
1960 - 1988

Year	Karluk[2/]	Ayakulik[3/]	Fraser[4/]	Upper Station[5/]
1960	348,693	34,546	440	45,193
1961	296,636	205,493	273	73,884
1962	589,685	278,954	1,290	39,531
1963	405,470	63,563	11,839	30,270
1964	484,075	36,342	9,989	37,249
1965	350,831	76,456	9,174	22,603
1966	455,112	66,057	16,456	44,931
1967	372,464	227,089	21,834	88,980
1968	344,940	220,850	16,707	40,531
1969	318,866	71,160	13,981	95,371
1970	313,552	28,395	24,039	55,001
1971	142,265	109,199	55,366	104,809
1972	210,087	113,733	65,777	96,736
1973	252,726	119,993	56,255	87,633
1974	340,565	181,631	82,609	285,665
1975	378,828	94,517	64,199	81,973
1976	523,496	219,867	119,321	62,905
1977	552,248	306,982	139,548	77,565
1978	360,935	132,864	142,281	114,909
1979	513,137	223,070	126,762	174,557
1980	146,622	773,597	405,535	110,019
1981	222,706	279,200	377,716	181,578
1982	164,407	169,562	437,474	470,732
1983	436,145	171,415	166,655	289,250
1984	420,268	283,215	53,524	319,226
1985	995,948	388,759	506,336	435,817
1986	887,171	318,135	136,553	466,385
1987	766,251	261,913	48,956	232,195
1988	578,816	291,774	246,217	306,560

1/Estimated average total production potential:

	Karluk	Ayakulik	Fraser	Upper Station	Total
Desired Total Escapement	900,000	300,000	200,000	275,000	1,675,000
Avg. 2.5:1 Ret./Spawner	2.5:1	2.5:1	2.5:1	2.5:1	2.5:1
Total Production	2,250,000	750,000	500,000	687,000	4,187,500
Potential Average Harvest	1,350,000	450,000	300,000	412,500	2,512,500

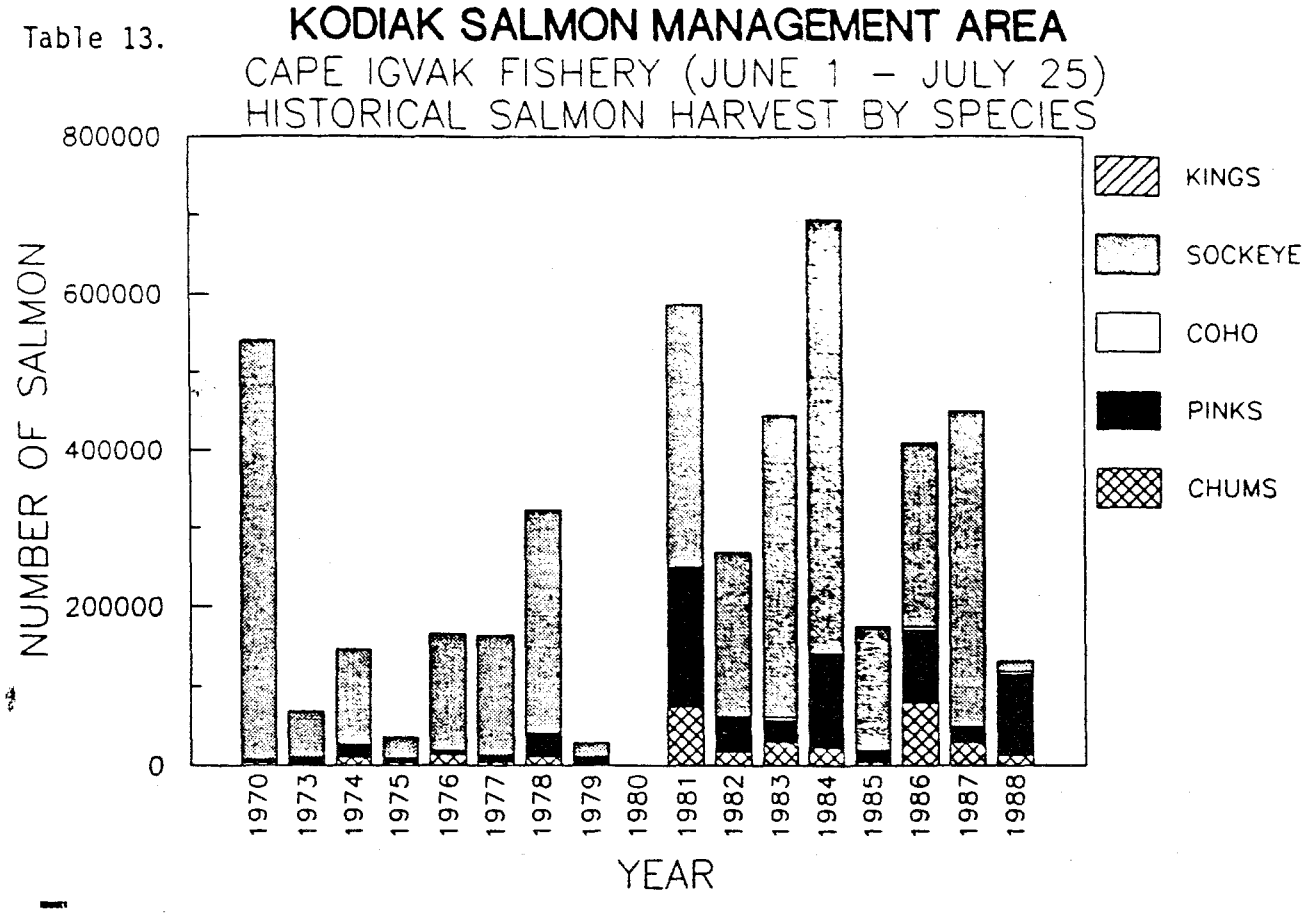
2/Karluk weir location: 1960-1976 Karluk Lake; 1977 to present Karluk Lagoon.

3/Red River weir location: 1960-1969 Red Lake; 1970 to present Ayakulik Lagoon.

4/Fraser counts from fishpass at falls until 1983. New weirs below forks near stream terminus 1983 to present.

5/Upper Station weir location: 1960-1968 Upper Station Lagoon; 1969 to present at outlet of Upper Station Lake.

Table 13.



KODIAK SALMON MANAGEMENT AREA

CAPE IGVAK FISHERY (JUNE 1 - JULY 25)

HISTORIC SALMON HARVEST BY SPECIES

YEAR	KINGS	REDS	COHO	PINKS	CHUMS
1970	31	533,349	0	4,038	3,178
1973	70	58,008	4	7,475	2,435
1974	32	119,225	222	16,533	9,584
1975	1	26,554	28	5,573	3,282
1976	121	146,815	19	5,230	13,052
1977	28	149,487	5	8,799	3,993
1978	448	281,348	1,134	28,523	10,646
1979	2	17,437	365	9,212	1,303
1980	0	0	0	0	0
1981	153	336,783	562	174,482	73,740
1982	83	206,779	79	44,124	16,849
1983	427	383,156	3,720	27,994	28,512
1984	393	553,883	1,133	116,901	22,149
1985	258	154,534	875	13,532	4,740
1986	212	235,021	3,645	91,564	79,014
1987	457	401,016	1,012	18,930	28,840
1988	215	13,150	3,287	101,997	12,455

Table 14. CHIGNIK SOCKEYE RUN CATCHES[1/]
1964 - 1988
(Numbers of Fish in Thousands)

	Chignik Area		Cape Igvak		Balboa-Stepovak[8/]		
	Catch	%	Catch	%	Catch	%	Total Catch
1964[2/]	561	90.63	15	2.42	43	6.95	619
1965[2/]	635	90.46	11	1.57	56	7.98	702
1966[2/]	225	88.24	18	7.06	12	4.71	255
1967[2/]	473	91.67	23	4.46	20	3.88	516
1968[2/]	878	80.92	136	12.53	71	6.54	1,085
1969[2/]	310	74.70	98	23.61	7	1.69	415
1970[2/]	1,426	70.04	542	26.62	68	3.34	2,036
1971[2/]	1,016	76.97	253	19.17	51	3.86	1,320
1972[2/]	379	86.33	42	9.57	18	4.10	439
1973[3/]	768	89.41	53	6.17	38	4.42	859
1974[3/]	517	73.12	122	17.26	68	9.62	707
1975[3/]	115	81.56	24	17.02	2	1.42	141
1976[3/]	760	82.25	118	12.77	46	4.98	924
1977[3/]	1,543	90.39	129	7.56	35	2.05	1,707
1978[4/5/]	1,452	85.36	227	13.35	22	1.29	1,701
1979[4/6/]	799	91.11	15	1.71	63	7.18	877
1980[4/6/]	662	91.31	1	0.14	62	8.55	725
1981[4/6/]	1,605	79.97	284	14.15	118	5.88	2,007
1982[4/6/]	1,251	83.90	172	11.54	68	4.56	1,491
1983[4/6/]	1,451	73.06	318	16.01	217	10.93	1,986
1984[4/6/]	2,476	74.47	464	13.95	385	11.58	3,325
1985[4/7/]	692	79.72	125	14.40	51	5.88	868
1986[4/7/]	1,456	82.63	188	10.67	118	6.70	1,762
1987[4/7/]	1,660	78.01	322	15.08	147	6.91	2,128
1988[4/7/]	675	95.74	11	1.56	19	2.70	705

1964-72 catch and percentage figures are total for the entire season. Catch figures and percentages after 1972 are only through July 25.

Footnotes are listed on following page.

Table 14. (continued) CHIGNIK SOCKEYE RUN CATCH FOOTNOTES

1/The Cape Igvak and Balboa-Stepovak figures represent 80% of the total sockeye catches for those areas as it is estimated that roughly 80% of the sockeye caught in the Cape Igvak section and Balboa-Stepovak are destined for Chignik.

2/Prior to 1973, Cape Igvak and Balboa-Stepovak fisheries were regulated by set weekly fishing periods in the regulation book, usually 5 days per week. The situation was sometimes modified due to poor escapements at Chignik.

3/During 1973 through 1977 all three fisheries were managed on a day for day basis.

4/Beginning with the 1978 season, the current Cape Igvak Fishery Management Plan still in effect today was implemented. The Cape Igvak fishery was allocated 15 percent of the total Chignik destined sockeye catch.

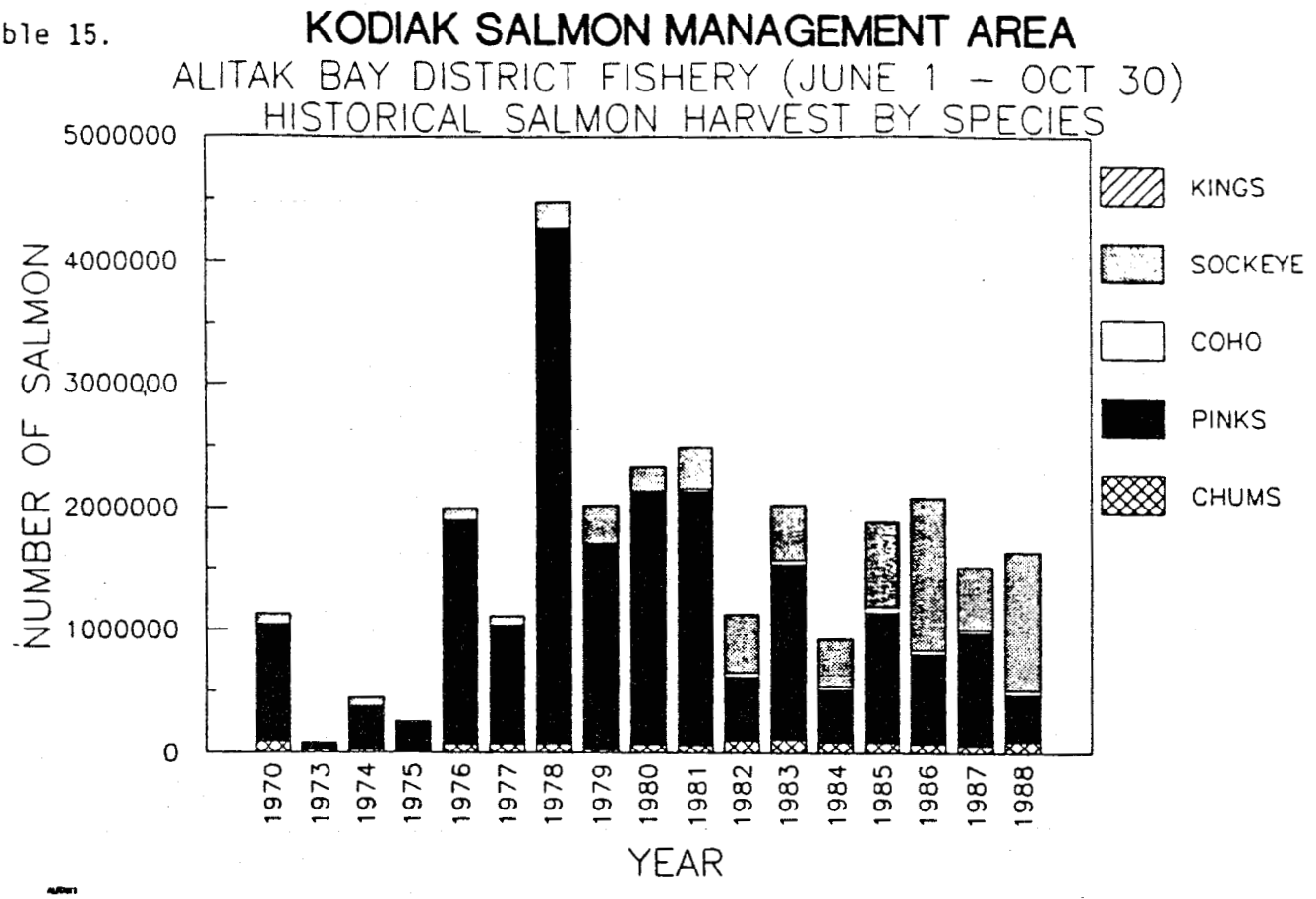
5/During 1978, seining prior to July 11 was disallowed in Beaver, Balboa, and Stepovak Bays. The set gillnet fishery was allowed to fish 3 days per week thorough July 10 after which the fishery was managed on the basis of local stocks.

6/During 1979-1984, 5 days per week were allowed at Balboa-Stepovak (including Beaver Bay) with a ceiling of 60,000 estimated Chignik destined sockeye, prior to July 11. If the Chignik Area sockeye catch was 1,000,000 or more before July 11, the 60,000 ceiling was to be dropped.

7/Beginning in 1985, Balboa-Stepovak was placed on an allocation of 6.2 percent of the total estimated Chignik sockeye catch through July 25. After July 25, Balboa-Stepovak is managed on a local stock basis. The allocation was changed to an even 6 percent beginning in 1988. Seining is still not allowed prior to July 11.

8/Balboa-Stepovak includes Beaver Bay. This fishery is also referred to as the Southeastern District Mainland fishery.

Table 15.



KODIAK SALMON MANAGEMENT AREA

ALITAK BAY DISTRICT FISHERY (JUNE 1 - OCT 30)

HISTORIC SALMON HARVEST BY SPECIES

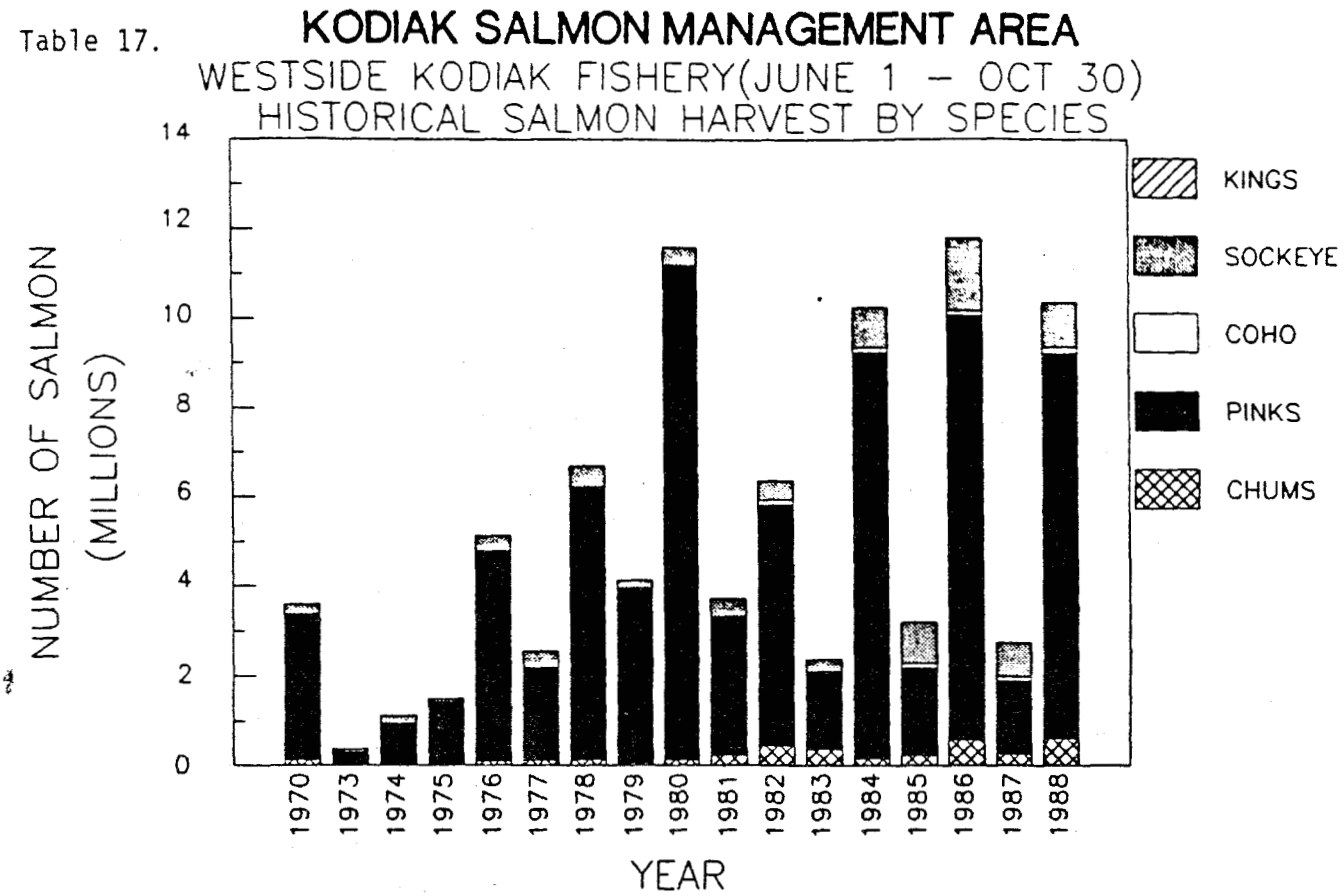
YEAR	KINGS	REDS	COHO	PINKS	CHUMS
1970	8	81,544	4,540	949,871	93,320
1973	4	10,338	125	49,932	24,408
1974	19	67,743	1,284	355,154	23,939
1975	0	16,498	1,627	235,711	2,853
1976	18	97,015	3,535	1,826,482	68,132
1977	20	78,812	1,343	961,673	70,969
1978	694	218,301	2,788	4,191,756	72,166
1979	108	317,260	15,007	1,664,410	22,462
1980	33	197,937	13,120	2,053,080	67,659
1981	45	346,073	17,011	2,073,629	61,513
1982	43	476,862	29,378	519,880	101,543
1983	159	460,087	28,947	1,428,526	107,786
1984	290	382,729	25,299	433,806	84,924
1985	199	703,235	43,914	1,057,940	84,760
1986	134	1,247,976	30,548	728,205	75,643
1987	105	515,484	17,960	916,883	59,727
1988	624	1,124,073	30,001	385,735	93,401

Table 16.

KODIAK MANAGEMENT AREA
ALITAK DISTRICT SOCKEYE HARVEST BY GEAR
1977 - 1988

	GEAR				
	Seine		Gillnet		
Year	Number	%	Numbers	%	Total
1977	32,000	41	47,000	59	79,000
1978	103,000	47	115,000	53	218,000
1979	179,000	56	139,000	44	318,000
1980	72,000	36	126,000	64	198,000
1981	142,000	41	204,000	59	346,000
1982	93,000	20	382,000	80	475,000
1983	210,000	46	250,000	54	460,000
1984	162,000	42	221,000	58	383,000
1985	293,000	42	411,000	58	704,000
1986	521,000	42	728,000	58	1,249,000
1987	193,000	38	322,000	62	515,000
1988	483,000	43	641,000	57	1,124,000
11 Year Avg. 1977 - 1987	182,000	41	268,000	59	450,000

Table 17.



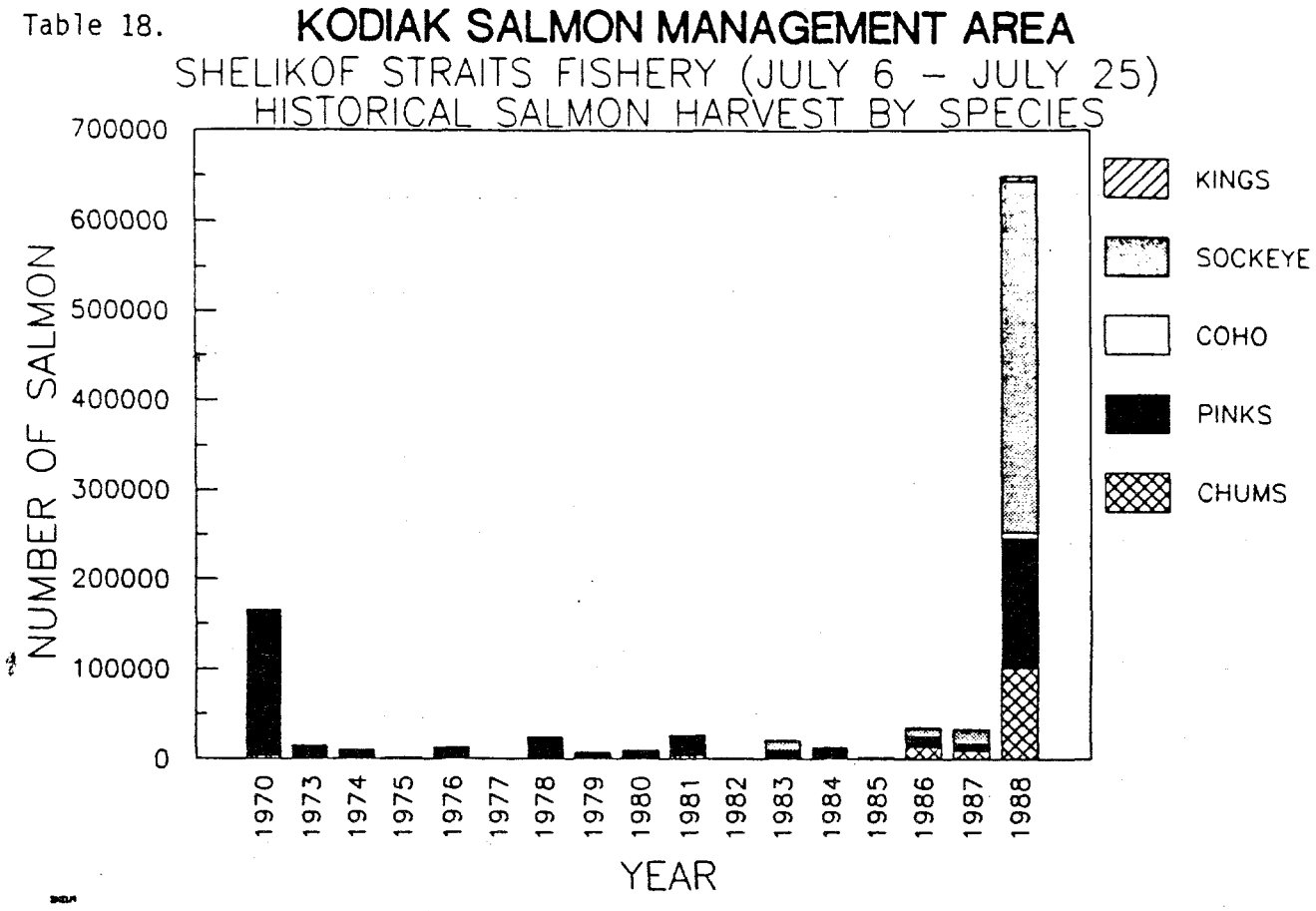
KODIAK SALMON MANAGEMENT AREA

WESTSIDE KODIAK FISHERY (JUNE 1 - OCT 30)

HISTORIC SALMON HARVEST BY SPECIES

YEAR	KINGS	REDS	COHO	PINKS	CHUMS
1970	598	221,155	34,196	3,211,612	127,350
1973	139	71,740	978	255,141	46,457
1974	204	176,270	2,208	907,341	33,864
1975	44	71,450	12,505	1,381,538	34,106
1976	212	341,502	10,010	4,668,346	94,543
1977	449	355,060	11,837	2,065,723	113,187
1978	1,336	476,020	17,289	6,046,100	127,772
1979	601	183,422	44,210	3,832,454	60,414
1980	377	409,383	33,298	11,024,270	128,993
1981	841	407,733	31,479	3,045,743	233,440
1982	830	421,666	111,091	5,366,406	442,142
1983	2,284	277,052	42,405	1,689,945	366,951
1984	3,566	910,500	92,943	9,075,796	159,241
1985	4,281	917,402	90,431	1,962,918	225,712
1986	3,728	1,632,227	102,304	9,472,330	584,538
1987	2,267	753,929	85,066	1,643,244	261,589
1988	11,848	998,891	141,115	8,574,478	609,946

Table 18.



KODIAK SALMON MANAGEMENT AREA

SHELIKOF STRAITS FISHERY (JULY 6 - JULY 25)

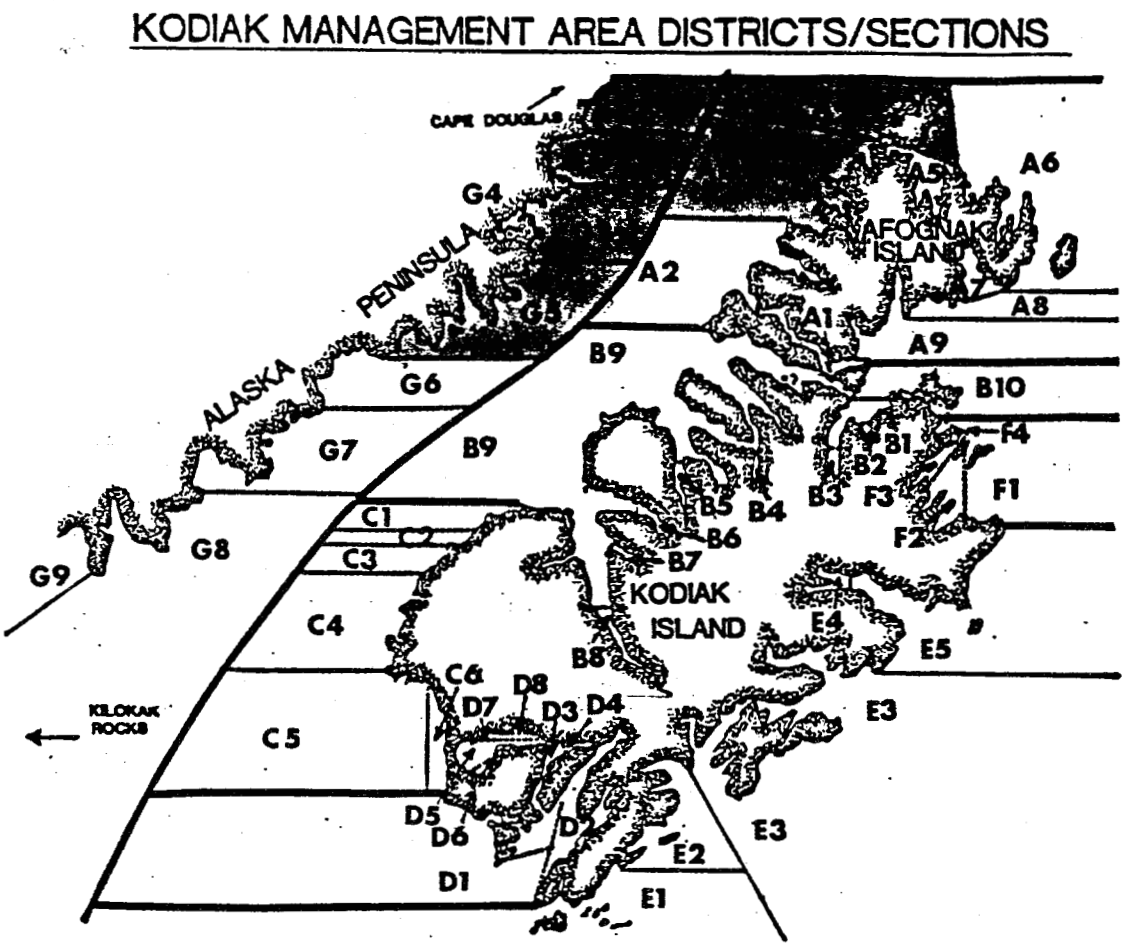
HISTORIC SALMON HARVEST BY SPECIES

YEAR	KINGS	REDS	COHO	PINKS	CHUMS
1970	8	1,745	889	159,367	3,112
1973	11	679	19	13,703	421
1974	0	1,742	36	7,657	338
1975	0	264	1	1,046	230
1976	11	894	39	11,399	261
1977	0	0	0	0	0
1978	2	1,415	2	20,452	2,137
1979	1	1,940	18	5,134	43
1980	2	152	4	9,540	256
1981	0	1,179	64	21,103	3,886
1982	0	370	2	55	28
1983	18	10,719	53	8,806	972
1984	8	2,204	24	9,196	1,257
1985	0	1,116	13	429	143
1986	48	9,252	269	11,879	13,405
1987	281	15,563	376	7,878	8,839
1988	5,198	391,919	5,922	144,373	101,288

Figure 10.

SHELIKOF STRAIT INTERCEPT AREA For Cook Inlet Bound Sockeye

Designated by the Kodiak Area ADF&G Finfish Management Staff
Based Upon 1988 In-Season Harvest/Effort Data



KODIAK MANAGEMENT AREA DISTRICTS/SECTIONS

A. AFOGNAK DISTRICT

A1 RASPBERRY STRAITS S.
A2 SOUTHWEST AFOG. S.
A3 NORTHWEST AFOG. S.
A4 BHUYAN BAY S.
A5 PERENOSA BAY S.
A6 NORTHEAST AFOG. S.
A7 IZHUT BAY S.
A8 KITOI BAY S.
A9 DUCK BAY S.

B. NORTHWEST KODIAK D.

B1 ANTON LARSON BAY S.
B2 SHERATIN BAY S.
B3 KIZHUYAK BAY S.
B4 TERROR BAY S.
B5 N. UGANIK BAY S.
B6 SPIRIDON BAY S.
B7 ZACHAR BAY S.
B8 UYAK BAY S.
B9 CENTRAL S.
B10 NORTH CAPE S.

C. SOUTHWEST KODIAK D.

C1 OUT. KARLUK S.
C2 IN. KARLUK S.
C3 STURGEON S.
C4 HALIBUT BAY S.
C5 OUT. AYAKULIK S.
C6 IN. AYAKULIK S.

D. ALITAK BAY D.

D1 C. ALITAK S.
D2 HUMPY-DEAD. S.
D3 MOSER-OLGA B.
D4 DOG SAL. FLATS S.
D5 OUT. UP. STAT. S.
D6 IN. UP. STAT. S.
D7 OUT. AKALURA S.
D8 IN. AKALURA S.

E. EASTSIDE KODIAK D.

E1 7-RIVERS S.
E2 2-HEADED S.
E3 SITKALIDAK S.
E4 IN. UGAK BAY S.
E5 OUT. UGAK S.

F. NORTHEAST KODIAK D.

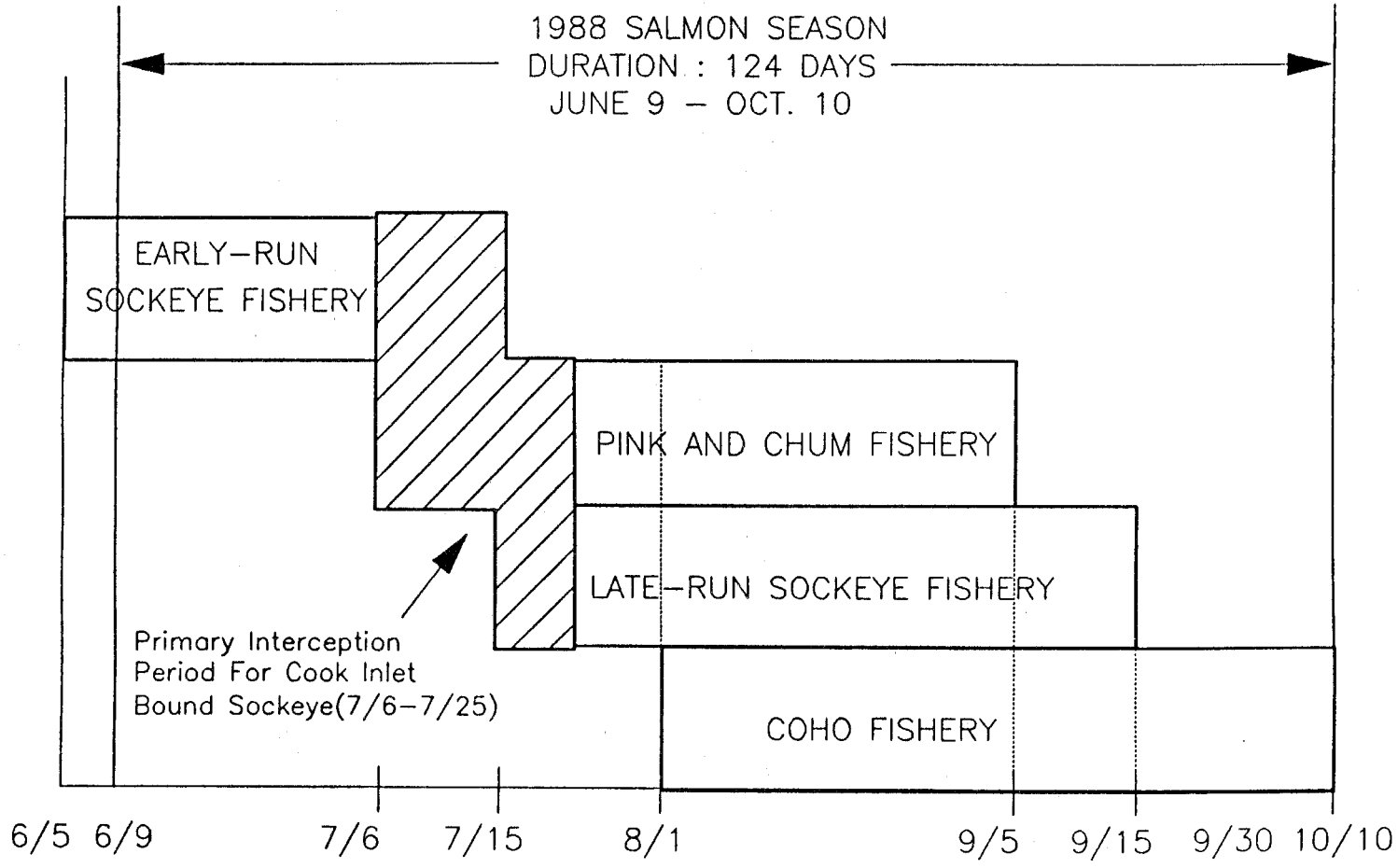
F1 OUT. CHINIAK B. S.
F2 IN. CHINIAK B. S.
F3 BUSKIN RIVER S.
F4 MONASHKA/MILL B. S.

G. MAINLAND DISTRICT

G1 [illegible]
G2 [illegible]
G3 [illegible]
G4 [illegible]
G5 [illegible]
G6 KATMAI S.
G7 ALINCHAK S.
G8 CAPE IGVAK S.
G9 WIDE BAY S.

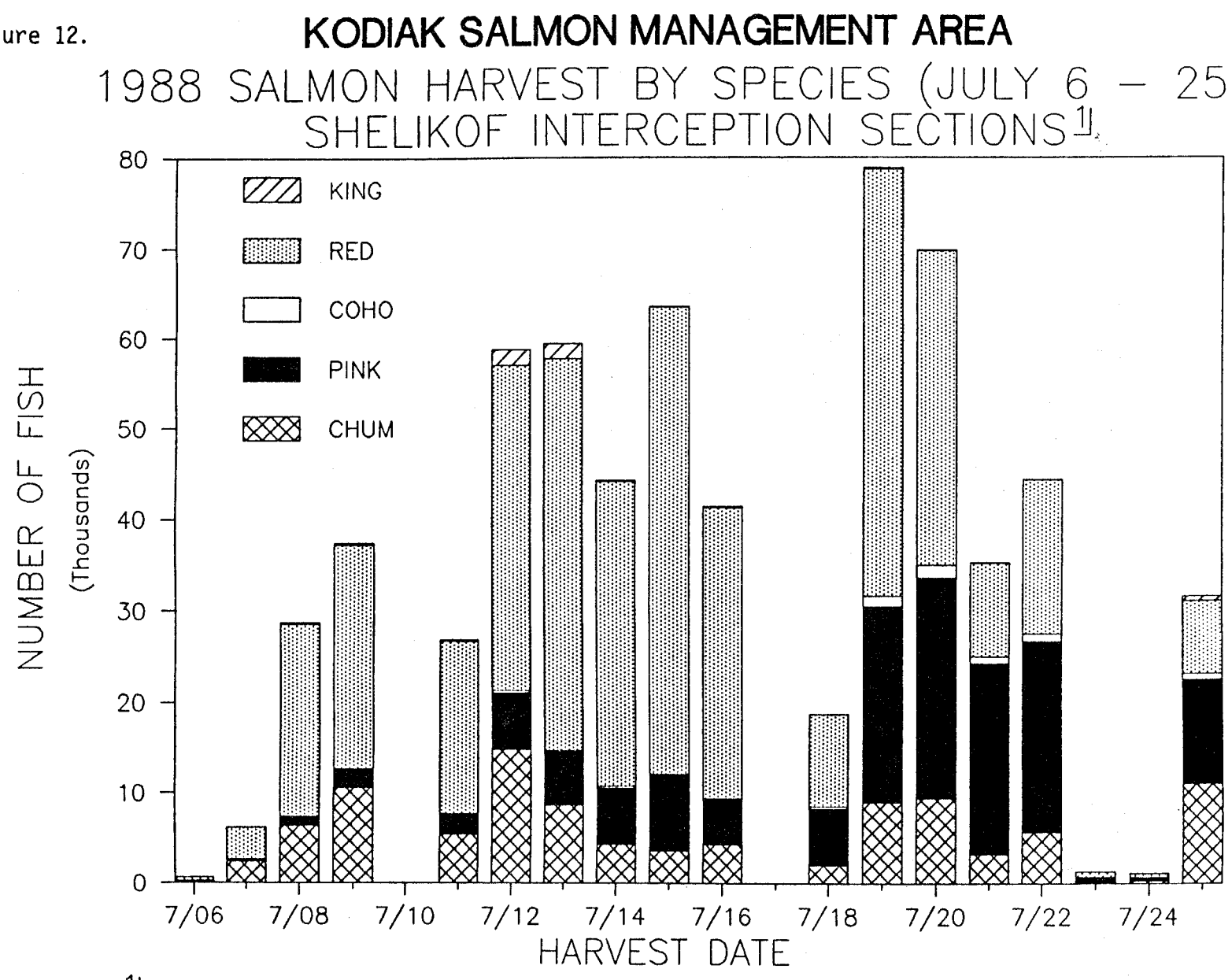
Figure 11.

KODIAK COMMERCIAL SALMON FISHERIES MANAGEMENT CHRONOLOGY



CHRONO88

Figure 12.



1/ Shelikof Interception Sections include: N.W. Afognak, Shuyak, Dakavak, Inner and Outter Kukak, Hallo Bay, and Big River Sections

INT

Figure 13.

SOCKEYE HARVEST COMPARISON BETWEEN UPPER COOK INLET AND PORTIONS OF THE KODIAK AREA

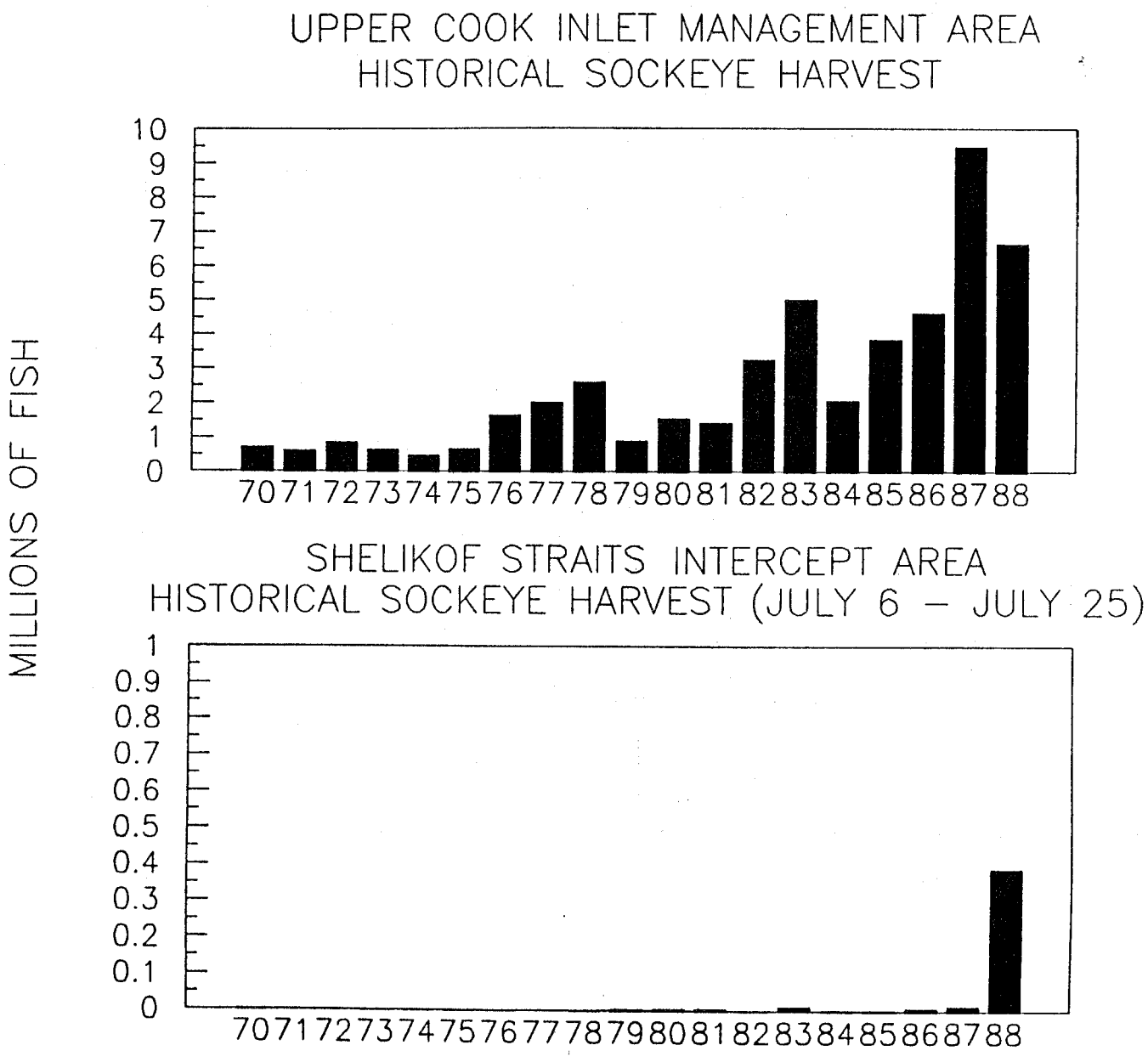
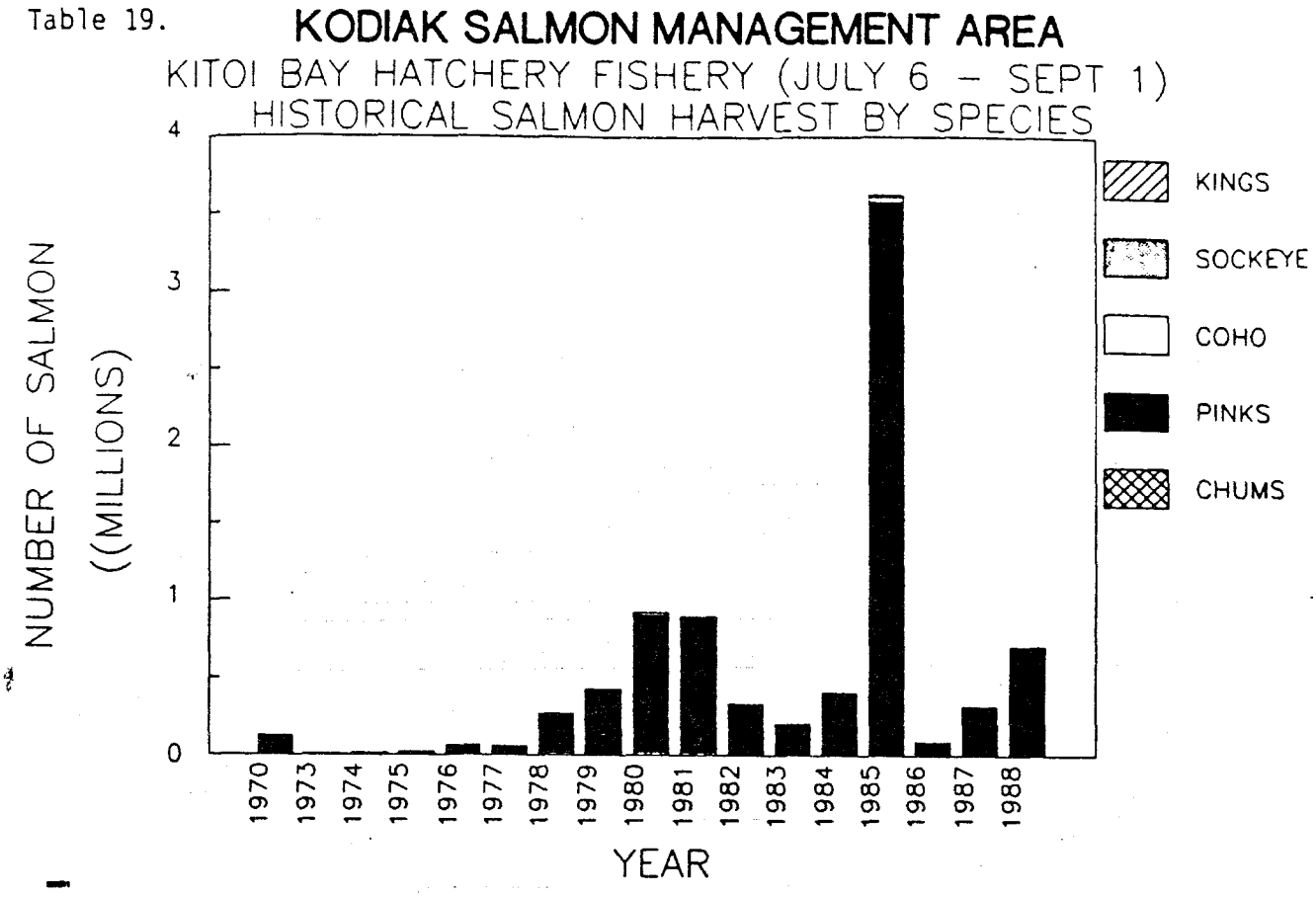


Table 19.



KODIAK SALMON MANAGEMENT AREA

KITOI BAY HATCHERY FISHERY (JULY 6 - SEPT1)

HISTORIC SALMON HARVEST BY SPECIES

YEAR	KINGS	REDS	COHO	PINKS	CHUMS
1970	11	7,182	2,607	105,345	10,989
1973	1	457	47	3,240	673
1974	0	258	12	8,794	485
1975	6	2,233	591	13,012	1,689
1976	40	5,154	720	53,783	4,765
1977	1	1,465	689	49,682	4,828
1978	133	14,850	4,352	234,409	13,674
1979	6	6,098	5,702	413,272	5,469
1980	4	3,098	12,483	886,837	19,602
1981	9	5,841	9,349	861,544	18,437
1982	23	2,546	10,147	314,897	6,889
1983	70	8,248	2,785	192,225	2,732
1984	11	2,828	6,063	400,072	3,117
1985	32	13,327	29,402	3,582,681	5,655
1986	3	1,502	1,399	89,544	1,368
1987	16	9,606	5,665	306,292	2,854
1988	23	4,993	8,108	693,750	4,001

Table 20.

KODIAK MANAGEMENT AREA
1989
Projected Salmon Harvests

YEAR	KING	SOCKEYE	COHO	PINKS	CHUMS	TOTAL
1988	9,900	2,534,000	200,000	10,500,000	1,015,000	14,258,900

1989
PROJECTED SALMON HARVEST SUMMARY
BY SPECIES AND BY FISHERY CHRONOLOGY

Fisheries	Projected Harvest (In Millions of Fish)
Early Run Sockeye Salmon Fisheries 6/9-7/15)	
- Cape Igvak	.141
- Karluk	.250
- Ayakulik	.367
- Upper Station	.091
- Fraser	.132
- Minor Systems	.070
- Other (Non-local stock)	.070
Sub-total	1.121
Pink Salmon Fisheries (7/6-9/5)	
- Afognak (Hatchery)	2.100
- Afognak (Natural)	.350
- Westside Kodiak	3.100
- Alitak	2.100
- Eastside/North end Kodiak	1.850
- Mainland	1.000
Sub-total	10.500
Chum Salmon Fisheries (7/6-9/5)	
- Afognak (Hatchery	.000
- Afognak (Natural)	.050
- Westside Kodiak	.350
- Alitak	.080
- Eastside/North end Kodiak	.260
- Mainland	.275
Sub-total	1.015
Late Run Sockeye Salmon Fisheries (7/15-9/15)	
- Cape Igvak	.133
- Karluk	.300
- Ayakulik	.151
- Upper Station	.779
- Fraser	-
- Minor Systems	.020
- Other (Non-local stocks)	.030
Sub-total	1.413
Coho Salmon Fisheries (8/1-10/1)	
- Afognak	.050
- Westside	.065
- Alitak	.030
- Eastside/North end Kodiak Island	.025
- Mainland	.030
Sub-total	.200
1989 GRAND TOTAL PROJECTED HARVEST FOR ALL KODIAK SALMON FISHERIES[1]	14.258 Million Salmon

[1] Includes an estimated incidental king harvest of .010 million.